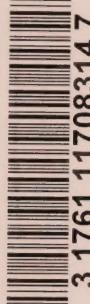


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National Energy Board

Reasons for Decision

Foothills Pipe Lines
(Alta.) Ltd.

GH-4-94

January 1995

Facilities

National Energy Board

Reasons for Decision

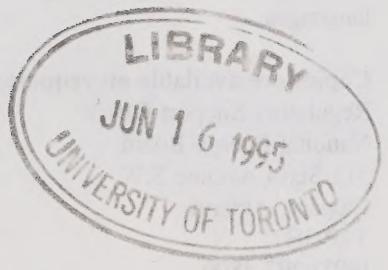
In the Matter of

Foothills Pipe Lines (Alta.) Ltd.

Application dated 30 June 1994
for the Wild Horse Pipeline Project

GH-4-94

January 1995



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Canada 1995

Cat. No. NE22-1/1994-11E
ISBN 0-662-22786-7

This report is published separately in both official
languages.

Copies are available on request from:
Regulatory Support Office
National Energy Board
311 Sixth Avenue S.W.
Calgary, Alberta
T2P 3H2
(403) 292-4800

For pick-up at the NEB office:
Library
Ground Floor

Printed in Canada

© Ministre des Travaux publics et des Services
gouvernementaux Canada 1995

Nº de cat. NE22-1/1994-11F
ISBN 0-662-99572-4

Ce rapport est publié séparément dans les deux
langues officielles.

Exemplaires disponibles sur demande auprès du:
Bureau du soutien à la réglementation
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Imprimé au Canada

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Abbreviations

the Act	the <i>National Energy Board Act</i>
ADOE	Alberta Department of Energy
AFUDC	allowance for funds used during construction
AFW	Alberta Fish and Wildlife
Altamont	Altamont Gas Transmission Company
ANG	Alberta Natural Gas Company Ltd
ANGTS	Alaska Natural Gas Transportation System
APUB	Alberta Public Utilities Board
the Board	National Energy Board
Btu	British thermal unit
CAPP	Canadian Association of Petroleum Producers
CFB	Canadian Forces Base
cm	centimetre
Cogen	cogeneration
Coles	Coles Gilbert Associates Ltd.
Colorado Interstate	Colorado Interstate Gas Company
Conwest	Conwest Exploration Company Limited
CPR	Canadian Pacific Railway
CSA	Canadian Standards Association
DFO	Department of Fisheries and Oceans
EARP Guidelines Order	<i>Environmental Assessment and Review Process Guidelines Order</i>
FERC	U.S. Federal Energy Regulatory Commission
EIL	Environmental Issues List
Entech	Entech Inc.

EOC	East of California
Express Pipeline	Express Pipeline Ltd.
Foothills, Foothills (Alta), Applicant, or Company	Foothills Pipe Lines (Alta.) Ltd.
Foothills (Sask.)	Foothills Pipe Lines (Sask.) Ltd.
ft	feet
ft ³ /sec	cubic feet per second
ha	hectare
hp	horsepower
IPL	Interprovincial Pipe Line Inc.
Kern River	Kern River Gas Transmission Company
km	kilometre
kPa	kiloPascal
m	metre
m ³ /yr	cubic metres per year
m ³ /d	cubic metres per day
m ³ /sec	cubic metres per second
Mcf	thousand cubic feet
mm	millimetre
MMBtu	million British thermal units
MMcf/d	million standard cubic feet per day
Mobil	Mobil Oil Canada
MOP	maximum operating pressure
MW	megawatt
NARCO	North American Resources Company

NGT, NOVA	NOVA Gas Transmission Ltd.
Norcen et al	North Canadian Oils Limited, North Canadian Marketing Inc., and Norcen Energy Resources Limited
Northern Border	Northern Border Pipeline Company
Northwest Pipeline	Northwest Pipeline Company
NUG	non-utility electric generation
OPR	<i>Onshore Pipeline Regulations</i>
Overland Trails	Overland Trails Transmission Company
Overthrust Pipeline	Overthrust Pipeline Company
PanCanadian	PanCanadian Petroleum Limited
PGT	Pacific Gas Transmission Company
PJ	petajoule
Prebuild Tariff	Phase I Gas Transportation Tariff
psig	pounds per square inch gauge
Questar Pipeline	Questar Pipeline Company
SMRID	St. Mary River Irrigation District
SoCal Edison	Southern California Edison Company
Tcf	trillion cubic feet
Tcf/yr	trillion cubic feet per year
TCPL, TransCanada	TransCanada PipeLines Limited
UEG	utility electric generation
U.S.	United States
WCSB	Western Canada Sedimentary Basin
Westcoast	Westcoast Energy Inc.
WMC	Western Market Center

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* (the "Act") and the Regulations made thereunder; and

IN THE MATTER OF an application dated 30 June 1994 by Foothills Pipe Lines Ltd. on behalf of Foothills Pipe Lines (Alta.) Ltd. for a Certificate of Public Convenience and Necessity under Part III of the Act in respect of the Wild Horse Pipeline project; and

IN THE MATTER OF National Energy Board Hearing Order GH-4-94;

HEARD at Calgary, Alberta on 3, 4, 5, 6, and 7 October 1994.

BEFORE:

C. Bélanger	Presiding Member
R. Priddle	Member
R. Illing	Member

APPEARANCES:

J. Lutes	Foothills Pipe Lines (Alta.) Ltd.
B. Pierce	
R.W. Graw	Alberta Natural Gas Company Ltd
D.G. Davies	
N.J. Schultz	Altamont Gas Transmission Company
R. Parker	
D.F. Bermingham	Altana Exploration Company
S. Trueman	Amoco Canada Petroleum Company Ltd.
R.B. Hillary	Hillary & Associates Inc.
P. Heeg	Kern River Gas Transmission Company
C.B. Woods	Mobil Oil Canada
A.S. Hollingworth	North Canadian Oils Limited, North Canadian Marketing Inc., and Norcen Energy Resources Limited
L.E. Smith	Northern Border Pipeline Company
N. Mills	NOVA Gas Transmission Ltd.
R.J. Harrison	Pacific Gas and Electric Company

R. Hunter	Pan-Alberta Gas Ltd.
K.J. Hadley	PanCanadian Petroleum Limited
S.R. Miller	Petro-Canada
L.G. Keough	Southern California Edison Company
S. Munro	
D.W. Rowbotham	Suncor Inc.
M. Forster	TransCanada PipeLines Limited
F.G. Berner	Western Market Center
R. Parker	
P. McCunn-Miller	Alberta Department of Energy
L.A. Boychuk	Board Counsel
B. de Jonge	

Overview

(Note: This overview is provided solely for the convenience of the reader and does not constitute part of this Decision or the Reasons, to which readers are referred for detailed text and tables.)

The Application

On 30 June 1994, Foothills Pipe Lines Ltd. filed, on behalf of Foothills Pipe Line (Alta.) Ltd. ("Foothills"), an application with the National Energy Board ("the Board") pursuant to section 52 of the *National Energy Board Act* for a certificate of public convenience and necessity authorizing the construction of a natural gas transmission pipeline in southeastern Alberta.

The proposed Wild Horse Pipeline is designed to provide export capacity at the international border near Wild Horse, Alberta of $20.89 \cdot 10^6 \text{ m}^3/\text{d}$ (737.5 MMcf/d) to serve markets in the United States and northern Mexico. The targeted in-service date is 1 November 1996.

The applied-for facilities consist of 215.5 km (134 miles) of 914 mm (36 inch) diameter line pipe between Princess, Alberta and the international border near Wild Horse, Alberta and a meter station near Wild Horse. The estimated capital cost is nearly \$139 million (in 1994 Canadian dollars).

The Wild Horse Pipeline would interconnect upstream with NOVA Gas Transmission Ltd.'s ("NGT") North Lateral near NGT's Princess Compressor Station and downstream at the Alberta/Montana border with Altamont Gas Transmission Company's ("Altamont's") proposed pipeline. The proposed Altamont pipeline would connect downstream with the proposed Western Market Center ("WMC") to be located near Muddy Creek, Wyoming.

Economic Feasibility

The Board is satisfied that the Wild Horse Pipeline would be used at a reasonable level over its economic life and that the associated demand charges would be paid given the evidence presented by Foothills in the areas of supply and markets and given the fact that the project will not proceed unless the specified certificate conditions are met. The following conditions would form part of any certificate that may be issued:

- Executed unconditional firm service agreements with a minimum term of 15 years for the full capacity of the proposed Wild Horse Pipeline shall be filed prior to the commencement of construction;
- Regulatory approvals for the Altamont pipeline and the WMC shall be demonstrated;
- Foothills' existing Prebuild facilities shall not be used as security in the financing the Wild Horse Pipeline; and
- The certificate shall expire on 30 June 1997 unless construction of the pipeline has commenced by that date.

Routing

The Board determined that the proposed pipeline route is acceptable. Foothills noted during the GH-4-94 proceeding, however, that minor modifications to the filed route may be necessary as a result of the review and approval process. Therefore, as a condition to any certificate that might be issued, the Board will require Foothills to file, for approval, any modifications that require a deviation from the proposed specific route.

Environmental Screening

The Board conducted an environmental screening of the applied-for facilities in compliance with the *Environmental Assessment and Review Process Guidelines Order* ("EARP Guidelines Order"). The Board ensured there was no duplication in requirements under the EARP Guidelines Order and the Board's own regulatory process. The Board determined that the potentially adverse environmental effects, including the social effects directly related to those environmental effects which may be caused by the proposal, would be insignificant or mitigable with known technology.

The Board accepted Foothills' undertaking to file for Board approval results of designated wildlife species surveys and fisheries studies prior to the commencement of construction.

Disposition

The Board has found that the proposed Wild Horse Pipeline is and will be required by the present and future public convenience and necessity, provided the conditions outlined in the GH-4-94 Reasons are met. Therefore, the Board will recommend to the Governor in Council that a certificate be issued.

Chapter 1

Introduction

1.1 The Application

On 30 June 1994, Foothills Pipe Lines Ltd. filed, on behalf of Foothills Pipe Lines (Alta.) Ltd. ("Foothills", "Foothills (Alta.)", "the Applicant", or "the Company"), an application with the National Energy Board ("the Board") pursuant to section 52 of the *National Energy Board Act* ("the Act") for a certificate of public convenience and necessity authorizing the construction of a natural gas transmission pipeline in southeastern Alberta.

The proposed Wild Horse Pipeline is designed to provide export capacity at the international border near Wild Horse, Alberta of $20.89 \times 10^6 \text{ m}^3/\text{d}$ (737.5 MMcf/d) to serve markets in the United States ("U.S.") and northern Mexico. The targeted in-service date is 1 November 1996.

The applied-for facilities consist of 215.5 km (134 miles) of 914 mm (36 inch) diameter line pipe between Princess, Alberta and the international border near Wild Horse, Alberta and a meter station near Wild Horse.

The Wild Horse Pipeline facilities are scheduled to be constructed during the June-October 1996 period at a capital cost of nearly \$139 million¹.

1.2 Project Overview

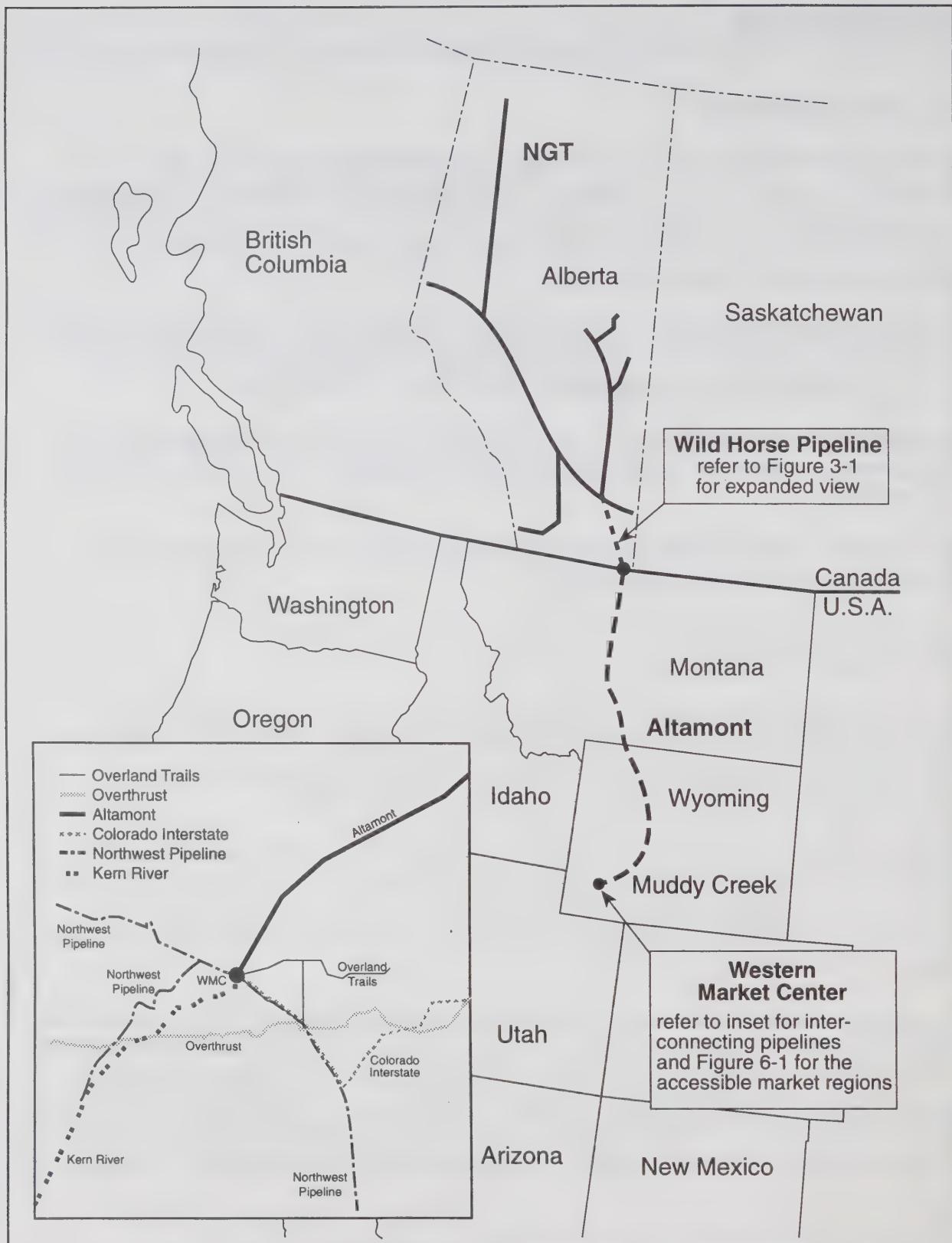
As shown by Figure 1-1 (and later by Figure 3-1), the proposed Wild Horse Pipeline would interconnect upstream with NOVA Gas Transmission Ltd.'s ("NGT's" or "NOVA's") North Lateral near NGT's Princess Compressor Station and downstream at the Alberta/Montana border with Altamont Gas Transmission Company's ("Altamont's") proposed pipeline.

Foothills indicated that the capital cost of the facility additions that would be required by NGT to accommodate the Wild Horse project is approximately \$184 million, based on the facilities forecast in NGT's 1995/96 Annual Plan. Foothills added, however, that the exact location, size, and type of facilities required will not be known until the NGT system design for the 1996/97 gas year has been finalized.

The proposed Altamont pipeline would connect downstream with the proposed Western Market Center ("WMC") to be located near Muddy Creek, Wyoming. The WMC's planned header, with connections to the interstate pipelines of Kern River Gas Transmission Company ("Kern River"), Northwest Pipeline Company ("Northwest Pipeline"), Questar Pipeline Company ("Questar Pipeline"), Colorado Interstate Gas Company ("Colorado Interstate"), Overland Trails Transmission Company ("Overland Trails"), and Overthrust Pipeline Company ("Overthrust Pipeline"; also referred to as "Trailblazer"),

¹ All cost figures are expressed in 1994 Canadian dollars unless indicated otherwise.

Figure 1-1
Wild Horse Pipeline Project
Connecting Systems



would provide shippers access to markets in the Rocky Mountain region, the Pacific Northwest, the Midwest, Southern California, Nevada, Baja California, and other parts of northern Mexico.

The Altamont pipeline would consist of approximately 1,000 kilometres (620 miles) of 762 mm (30 inch) diameter line pipe and associated compression and metering facilities at an estimated capital cost of about \$637 million (U.S. 1993 dollars). Mainline construction of the Altamont pipeline is scheduled to commence in April 1996 to accommodate a projected in-service date of 1 November 1996.

Foothills confirmed that no physical connection between the existing Foothills-owned Prebuild facilities¹ and the proposed Wild Horse Pipeline was planned during initial construction, and clarified that any such interconnection was outside the scope of the application.

1.3 GH-4-94 Hearing

On 5 August 1994, the Board issued Order GH-4-94 setting out the Directions on Procedure for the public hearing to be conducted in respect of the Wild Horse Pipeline application. The list of issues that appeared in the hearing order has been reproduced as Appendix I.

Further to Order GH-4-94, the Board conducted an oral hearing in Calgary, Alberta from 3 to 7 October 1994.

1.4 Environmental Screening

The Board conducted an environmental screening of the applied-for facilities in compliance with the *Environmental Assessment and Review Process Guidelines Order* ("EARP Guidelines Order") and ensured that there was no duplication in requirements under the EARP Guidelines Order and the Board's own regulatory process. The Board's views formed pursuant to Part III of the Act in respect of the environmental effects and socio-economic effects of the applied-for facilities are set out in Chapter 4 of these Reasons for Decision.

1.5 Completeness of Application

In its letter of comment dated 22 September 1994, the Canadian Association of Petroleum Producers ("CAPP") expressed the view that the Wild Horse application was incomplete in several key areas with respect to the Board's filing requirements for applications pursuant to section 52 of the Act and expressed concern with the Board's decision to conduct a hearing at that time. North Canadian Oils Limited, North Canadian Marketing Inc., and Norcen Energy Resources Limited (collectively referred

¹ In 1978, certificates of public convenience and necessity were declared to be issued to Foothills (pursuant to section 21 of the *Northern Pipeline Act*) in respect of the construction and operation of the Canadian portion of the proposed Alaska Natural Gas Transportation System ("ANGTS"). The southern part of the certificated pipeline, referred to as the Prebuild, was constructed and placed in service in the 1981-82 timeframe and has been used since its inception for the export of Canadian-sourced natural gas. The northern part of the system has not yet been constructed. The Prebuild is divided into four operating zones, identified as Zones 6 (East Leg in Alberta), 7 (West Leg in Alberta), 8 (West Leg in South B.C.), and 9 (East Leg in Saskatchewan).

to as "Norcen et al") submitted in their written evidence that the application was substantially deficient with respect to the information provided and expressed concern with respect to what it characterized as "an apparent change in policy". While supporting a degree of flexibility, Norcen et al suggested that the Board should require closer adherence to the section 52 filing requirements in this instance. A number of parties expressed similar concerns in argument. PanCanadian, for instance, concluded that the application was not complete "when compared with the more typical facility applications previously filed with the Board", while TransCanada suggested that this proceeding was not the proper forum for adopting new filing guidelines.

In reply, Foothills stated that it had, insofar as it was possible, attempted to meet the Board's filing requirements. Reference was made to subsection 3(2) of the Board's *Rules of Practice and Procedure*, C.R.C. 1978, c. 1057, as amended, which provides that "the Board may in any proceeding before the Board upon an application direct either orally or in writing that the provisions of these Rules or any of them shall not apply, or shall apply in part only". Foothills clarified that, if it was not evident from the application, it had been Foothills' intention to seek relief.

Views of the Board

Having set this matter down for hearing, it is manifest that the Board had made a determination that the application was sufficiently complete to be considered and that relief from the comprehensive filing requirements had, in effect, been granted. As the Board recently stated in its Reasons for Decision on Hydro-Québec's 24 May 1994 application for a permit to export firm and interruptible electricity, it is a question of fact for the Board to decide whether an applicant has complied with the Board's filing requirements in any particular case¹. On this basis, the Board does not agree that its decision to set the Wild Horse application down for hearing reflects a change in policy or an amendment to its filing requirements. In the Board's view, there was sufficient compliance with the filing requirements, in the circumstances of this case, to consider the application in the light of the statutory criteria set out in section 52 of the Act.

The question of whether or not the evidence presented by the Applicant in this proceeding is sufficient to enable the Board to make a decision that the applied-for facilities are in the present and future public convenience and necessity is another matter, which is appropriately dealt with in these Reasons for Decision.

¹ Hydro-Québec, Reasons for Decision, December 1994, pages 16 and 17.

Chapter 2

Design and Cost of Wild Horse Facilities

2.1 Design

The Wild Horse Pipeline is designed to deliver $20.89 \text{ } 10^6 \text{ m}^3/\text{d}$ (737.5 MMcf/d) of natural gas to Altamont. The maximum operating pressure of the proposed mainline is 6,895 kPa (1,000 psig). The nominal design receipt pressure at the interconnection with NGT North Lateral Loop #2 is 6,205 kPa (900 psig), while the design delivery pressure for the interconnection with Altamont is 4,140 kPa (600 psig).

Foothills stated that the chosen route was selected from two alternatives previously considered by NGT for connecting to the Altamont receipt location near Wild Horse. The first option involved originating the pipeline at Empress near the Alberta/Saskatchewan border, while the second option involved connecting the pipeline to NGT's North Lateral Loop #2 near the Princess Compressor Station. The Princess route was selected as it had a capital cost advantage, primarily due to a higher receipt pressure available at Princess and reduced facility requirements due to not having to move the Wild Horse volumes from Princess to Empress.

Foothills also stated that three options, as detailed below, had been analyzed in order to determine the optimum pipe size and system configuration:

- 1) 762 mm (30 inch) diameter - 8,690 kPa (1,260 psig) MOP - with 15 MW (20,000 hp) compression;
- 2) 914 mm (36 inch) diameter - 6,895 kPa (1,000 psig) MOP - without compression; and
- 3) 1,067 mm (42 inch) diameter - 6,450 kPa (935 psig) MOP - without compression.

Based on an optimization analysis, the second option was selected as it yielded both the lowest capital cost and the lowest cost of service (NGT and Foothills combined) for the initial design volume, and was compatible with potential future expansion.

Foothills also stated in its application that its proposed facilities would be designed and constructed in accordance with the Board's *Onshore Pipeline Regulations* and the latest edition of the CSA gas pipeline standard and related material standards.

Views of the Board

The Board is satisfied that the design of the applied-for facilities is appropriate.

2.2 Capital Cost Estimate

Foothills provided a capital cost estimate for the Wild Horse Pipeline of \$138.6 million. The Company's breakdown of this cost estimate is provided in Table 2-1.

Table 2-1
Capital Cost Estimate

(All costs are in thousands of 1994 dollars)

MATERIALS	
• Pipe, Valves, & Fittings	39,430
• Pipe Coating	7,130
• Meter Station	3,720
• Other Materials	240
SUB-TOTAL	50,520
INSTALLATION	
• Pipeline	59,421
• Meter Station	2,359
SUB-TOTAL	61,780*
PROJECT MANAGEMENT	6,725
OTHER	
• Land	1,810
• Insurance	160
SUB-TOTAL	1,970
OVERHEAD	3,363
CONTINGENCY	9,910
AFUDC	4,355
PROJECT TOTAL	\$138,623

*Note: Based on the installation cost estimates provided (i.e. \$59,421,000 for "pipeline" and \$2,359,000 for "meter station"), this sub-total has been adjusted by the Board from the \$61,273,000 value that appeared in Table 12-1 of the application.

Foothills confirmed that the contingency item represents 8 percent of the total capital cost estimate, and that the allowance for funds used during construction (AFUDC) was calculated using an AFUDC rate of 10.31 percent¹. This rate is a composite of a debt rate of 9 percent¹ and an equity rate of 12.75 percent (65/35 debt/equity ratio assumed).

In response to parties' concerns regarding cost overruns, Foothills advised that three recent expansion projects in Zones 8 and 9 (South B.C. Expansion, Compressor Station 393 Installation, and Compressor Station 394 Unit Addition) were completed for less than the estimated cost, with contingency, and that, moreover, both the South B.C. Expansion and the Compressor Station 393 project were completed for less than the estimated cost, without contingency.

Views of the Board

The Board is satisfied with Foothills' capital cost estimate.

¹ The Board notes that this interest rate on debt differs from the 9.5 percent figure forecast in Foothills' application for the Wild Horse Pipeline (as referenced in Chapter 5 of these Reasons). As a result, the AFUDC rate of 10.31 percent also differs from the 10.64 percent value assumed by Foothills for the rate of return on rate base for the Wild Horse Pipeline.

Chapter 3

Public Consultation, Routing, and Land Matters

3.1 Public Consultation

Foothills initiated its notification program in respect of the Wild Horse Pipeline project on 1 June 1994. Through this program, Foothills solicited and encouraged public input on the proposal.

As part of this program, Foothills inserted a public notice in five southern Alberta newspapers which serve areas traversed by the pipeline route. The public notice described the proposed project route and identified dates and times of open house meetings to be held in the towns of Seven Persons and Suffield, Alberta. The purpose of these open houses was to provide a forum for inquiries and comments from interested persons.

Foothills also sent information packages to approximately 200 persons including all landowners and occupants along the pipeline right-of-way; municipal, provincial, and federal government officials; local native (i.e. all status and non-status Indian and Metis) organizations; and other interest groups. A list of these persons and organizations was filed with the Board in response to an information request. Foothills indicated that it would maintain a list of interested persons throughout project design and construction and advised that information updates would be sent to those persons.

In its application, Foothills indicated that a total of 14 persons responded to the public notices and the information packages, and that an additional 26 persons attended the two open houses. Foothills noted in its application that the comments raised focussed on routing, land compensation, river crossing information, environmental impacts, employment, and general information. In response to a Board information request, Foothills provided a more detailed summary of the issues raised and its current plans to address those issues.

In that same response, Foothills indicated that it was in the process of reviewing the issues identified, possible re-routes, and methods of construction mitigation, and that further review would include consideration of all issues associated with a particular re-route or change in procedure. Foothills added that, once it completed a full review of the issues, affected persons and organizations would be contacted (tentatively scheduled during the second quarter of 1995) to discuss further Foothills' proposed re-routing and construction methods.

In a response to another Board information request, Foothills undertook to update the Board regularly on the results of future public consultations. Foothills also indicated that it was committed to making all reasonable efforts to resolve, to the satisfaction of landowners and other interested persons, concerns regarding the Wild Horse project which had been expressed to date and which may be raised in the future. In the event that certain concerns cannot be resolved, Foothills undertook to notify the Board of the reasons for non-resolution.

Views of the Board

The Board is satisfied that Foothills has notified and discussed the proposal, including the specific route, in a timely and satisfactory fashion with government agencies, public interest groups, and affected landowners. The Board notes the Company's intention to review outstanding issues in consultation with those persons and organizations, and to notify the Board of the reasons for non-resolution of any issues.

3.2 Routing

As shown in Figure 3-1, the proposed route of the Wild Horse Pipeline follows a southeasterly path between the point of interconnection with NGT near Princess, Alberta¹ and the point of interconnection with the proposed Altamont pipeline at the international border near Wild Horse, Alberta.

In response to a Board information request, Foothills confirmed that it was seeking approval of a specific route rather than a pipeline corridor. The Company added, however, that minor modifications to the filed route may be necessary as a result of the review and approval process. As further discussed in section 3.3, the pipeline is planned to be constructed on a permanent 29 m (95 ft) wide right-of-way for the greater part of its length.

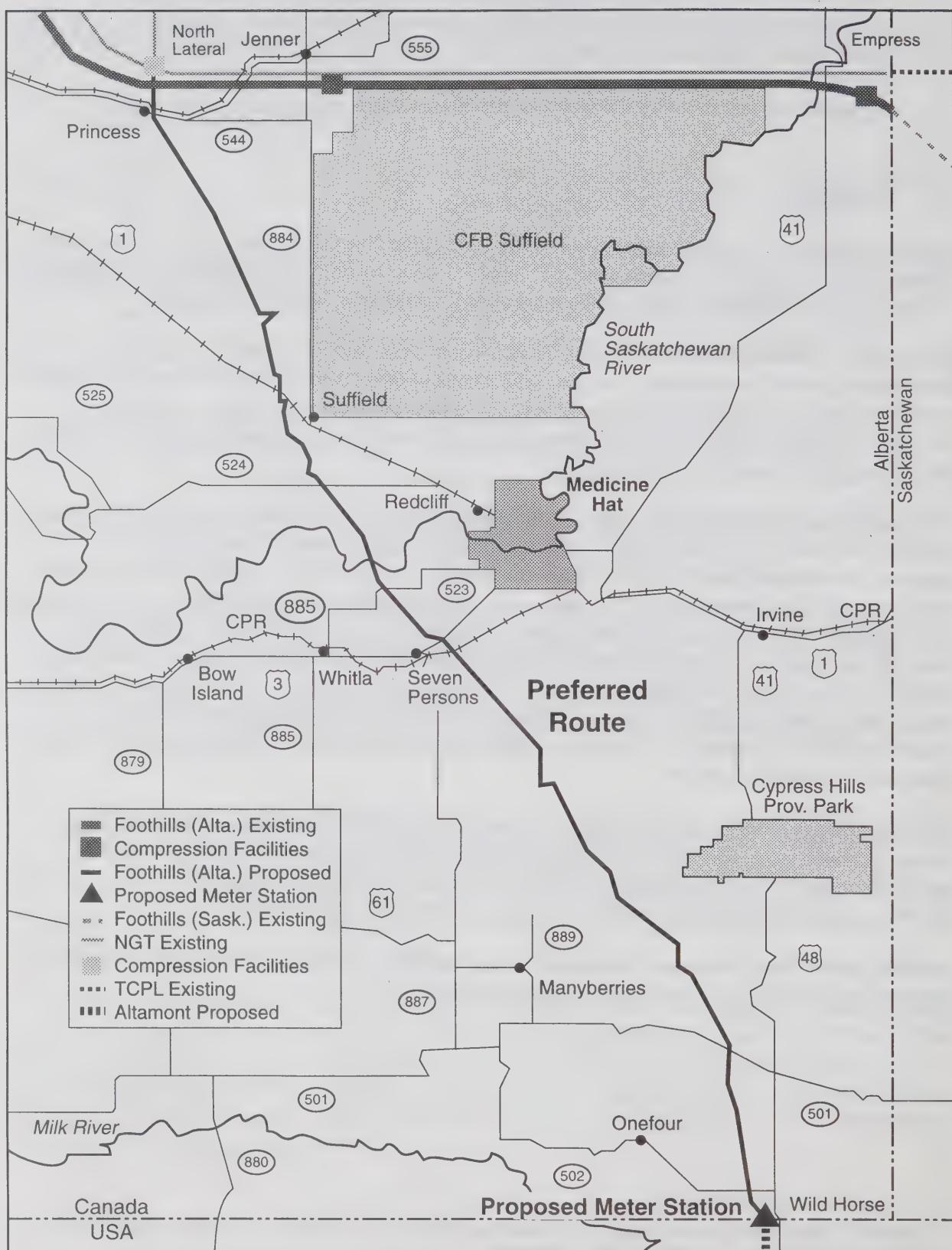
While the primary objective of the route selection process was the determination of the most economic and environmentally acceptable route for safe and efficient pipeline design, construction, and operation, Foothills indicated that many other engineering, environmental, and socio-economic factors were also taken into consideration. The engineering criteria included the minimization of route length where possible, the minimization of the number and length of crossings of rivers, streams, and wetlands, the avoidance of unstable slopes, and the minimization of steep slope crossings and rough terrain. Environmental considerations included landforms, soils, water resources, vegetation (especially native prairie habitat), fisheries, land use, aesthetics, and reclamation. With respect to socio-economics, Foothills advised that final route selection would be a subject of consultation between the Company and interested persons.

Foothills stated that the overall project area and possible corridors were subject to helicopter and ground reconnaissance, and that special emphasis was placed in the route selection process on conditions related to land use, terrain, potential environmental impacts, the South Saskatchewan River and other watercourse crossings, historic resources, and the cost of construction.

Foothills advised that three minor refinements to the initially selected route were incorporated as a result of the public consultation process (addressed in section 3.1).

¹ As noted in Chapter 2, the Princess interconnection point was chosen over an Empress interconnection point because of cost considerations associated with NGT facility requirements.

Figure 3-1
Wild Horse Pipeline Project
General Study Area



With respect to the expected minor modifications to the filed route, Foothills indicated that these minor modifications may be used as a mitigation technique to avoid, where necessary, plants and wildlife with a designated status as well as waterbodies and/or wetland areas. The possibility of such modifications is further addressed in Chapter 4 "Environmental and Socio-Economic Matters".

Foothills submitted that buffer distances to be used to avoid important reproductive habitats during periods of use will vary with terrain and vegetative cover. The distances associated with the routing modifications will vary with buffer distances and should modifications be necessary, they will generally be a maximum of 500 m (1640 ft) from the filed route. With respect to minimum distances for re-routing around waterbodies, Foothills indicated that it has only considered using a distance which is appropriate to avoid the wet conditions associated with the waterbodies. With respect to waterfowl habitat, Foothills indicated that routing distances would be a consideration that would be taken into account at the time of re-routing.

Views of the Board

The Board finds that Foothills' approach to route selection was appropriate, and that the proposed specific route is acceptable.

As noted above, Foothills expects that "minor modifications" will have to be made to the filed route prior to construction. Therefore, as a condition to any approval that might be issued, the Board will require Foothills to file, for approval, any modifications that require a deviation from the proposed specific route as described in the application. Each filing shall include: the results of public consultation with respect to the modification; the identity of any affected landowner(s) and the status of land acquisition; a photomosaic; and, as further discussed in Chapter 4, an environmental issues list identifying all relevant issues, the potential environmental effects, and the associated mitigation measures to render those effects insignificant. The Board further directs that any such filings be made prior to the filing of plans, profiles, and books of reference pursuant to section 33 of the Act.

The Board alerts Foothills to the fact that significant modifications to the route might require an amendment to the certificate under section 21 of the Act. The need for any such amendment will be considered by the Board on a case-by-case basis.

3.3 Land Matters

Foothills provided the Board with an outline of its land requirements along with a line list of the affected owners and occupants. A summary of the proposed land requirements follows:

(i) Fee Simple Lands

Foothills indicated in its application that the site requirements for the Wild Horse Meter Station are 100 m x 109 m (328 ft x 358 ft) for a total site area of 1.09 ha (2.69 acres). The Company also noted that approximately 1.75 ha (4.33 acres) of land would be required for a permanent access road. During cross-examination, Foothills indicated that the meter station would be located along the pipeline route close to the international border.

(ii) Permanent Right-of-Way

Foothills indicated that a 29 m (95 ft) wide permanent right-of-way would be required to provide sufficient room to allow access for maintenance equipment and to provide space for storage of excavated material during pipeline operations. A right-of-way of this width would also provide adequate protection against the risk of inadvertent third party damage in the event of future development activities adjacent to the right-of-way.

Foothills further indicated that additional permanent right-of-way would be required at the South Saskatchewan River and two coulees to provide sufficient space to allow equipment to access the pipeline during operations and maintenance. According to Foothills, the steeper slopes and greater depth of burial at these locations require more and larger pieces of excavating equipment and larger excavations in order to access the pipe. Foothills advised further that the width of the additional right-of-way at these locations has not been finalized, but that the total permanent right-of-way width is not expected to exceed 59 m (194 ft). Foothills submitted that this additional permanent right-of-way (rather than temporary workspace) is required in order to permit unrestricted and timely access to the area in the event of the need to expose and repair the pipeline.

(iii) Temporary Workspace

Foothills stated that temporary workspace of varying width would be required at specific locations along the entire length of the pipeline to accommodate welding equipment and to provide for the temporary storage of topsoil. The specific locations where temporary workspace may be required are primarily in areas of cultivated land which may require a triple lift topsoil stripping and ditching operation (due to the additional spoil pile(s) and the need to prevent mixing of the spoil).

According to Foothills, temporary workspace will also be required on a site-specific basis at other locations such as: road, highway, railroad, stream, canal, and pipeline crossings; side bend locations; areas of extra depth ditch; and any other areas requiring additional working space to facilitate the installation of the pipeline.

Views of the Board

Because of the potential effects on landowners and occupants, the nature and extent of the interest in land which an applicant requires is of concern to the Board. In general, the Board finds that Foothills' anticipated requirements are reasonable and justified.

The Board does have reservations, however, with respect to Foothills' stated requirement for additional permanent right-of-way at the South Saskatchewan River and the two coulees. The Board notes that Foothills indicated that additional permanent right-of-way is required in order to permit unrestricted and timely access to the area. The Board notes that the "Grant of Right-of-Way" document, filed by Foothills in response to a Board information request, would afford Foothills access to the aforementioned areas. The Board, given the limited justification and the absence of information on the crossing design, is not persuaded that additional permanent right-of-way in excess of the 29 m (95 ft) is required and considers that any additional space required during construction should be of a temporary nature.

Chapter 4

Environmental and Socio-Economic Matters

4.1 Assessment Process

Foothills submitted an environmental assessment report in conjunction with its application and a socio-economic assessment report separately under covering letter dated 28 September 1994 ("the assessments"). An Environmental Issues List ("EIL") which included the issues, potential effects, procedures, and permits was provided for the specific pipeline route. In general, the assessments provided information on land use, soils, agricultural capability/productivity, vegetation, fisheries, wildlife, water crossings, heritage resources, recreation, and environmentally significant areas.

The environmental and directly-related social effects of the project were considered concurrently under two separate processes:

- (i) an examination of the project pursuant to the Board's mandate under Part III of the Act; and
- (ii) an environmental screening of the application pursuant to the EARP Guidelines Order.

The Board's environmental review pursuant to Part III of the Act is detailed in this chapter. The environmental screening under the EARP Guidelines Order was conducted concurrently with the GH-4-94 proceeding pursuant to the Board's Directions on Procedure dated 5 August 1994.

4.2 Public Concerns and Specialist Advice

As a result of the public consultation process for the Wild Horse Pipeline project (addressed in Chapter 3), Foothills was apprised of a number of concerns regarding the proposed application, including the following:

- PanCanadian Petroleum Limited ("PanCanadian") raised concerns with respect to the crossing of coal designated areas, while the St. Mary River Irrigation District ("SMRID") identified concerns with the crossing of irrigation and water courses within the SMRID.
- The Grasslands Naturalists identified concerns with respect to the restoration of the South Saskatchewan River Valley, native seed mixes, Sage Grouse and Sharp-tailed Grouse habitat, and impacts on Swift Fox dens and Burrowing Owl nests. In addition, the Grasslands Naturalists filed a letter of comment with the Board for consideration in its initial assessment pursuant to the EARP Guidelines Order, which reiterated those concerns.
- A number of landowners expressed concerns in relation to land use issues, including the disturbance of drainage canals, damage to a willow stand, interference with the centre-pivot of an irrigation system, proximity to residences and possible future residences, proximity to archaeological sites, and the crossing of a slough and a hay field.

As noted in Chapter 3, Foothills has committed to making all reasonable efforts to resolve, to the satisfaction of landowners and other interested persons, concerns regarding the Wild Horse project which have been expressed to date or which may be raised in the future.

In addition to the public consultation process, the Board requested specialist advice pursuant to section 19 of the EARP Guidelines Order from the federal Department of Fisheries and Oceans ("DFO") in respect of fish and fish habitat related matters, and from Environment Canada in respect of wildlife and wildlife habitat matters. Comments received have been considered in the hearing process.

4.3 Environmental Matters

4.3.1 Soils and Agriculture

Lands crossed by the proposed Wild Horse Pipeline are used almost exclusively for agriculture, with the area north of the South Saskatchewan River being used primarily for grazing. Much of that area is native rangeland but some sections have been converted to improved pasture. In the central portion of the pipeline route, the right-of-way passes through irrigated land that draws water from the St. Mary Irrigation System. The southern portion of the right-of-way passes through native grasslands used almost exclusively for grazing.

Foothills indicated that the terrain and surficial materials found along the route pose no particular impediment to pipeline construction. The southern portion of the route encounters areas in which the pipeline crosses bedrock. However, Foothills indicated that it does not require any blasting because this bedrock is sufficiently soft and weathered so that grading and excavating should be possible using a bulldozer with a ripping tooth and backhoes. Foothills also indicated that the terrain is generally stable except where steep slopes are encountered near river and stream crossings and at eroded coulees.

Foothills provided specific information with respect to soil handling procedures in its application and has indicated that it intends to produce an environmental plans and procedures manual during the detailed planning phase of the Wild Horse Pipeline project. This manual would deal with environmental procedures for all issues associated with the project.

Foothills conducted a detailed soil survey of the proposed route to determine the best methods for soil handling during pipeline construction and subsequent reclamation. Foothills indicated that soils in the region are susceptible to wind and water erosion when disturbed, and that protection of soil resources is a matter of concern for provincial authorities as well as landowners.

Procedures to protect topsoil during construction include: stripping, temporarily stockpiling and replacing topsoils; use of tackifiers to reduce wind erosion of exposed soils during construction; amending, treating, and seeding replaced topsoil to reduce or eliminate wind and water erosion; and contouring soils or placing physical structures to impede the movement of surface water and reduce or prevent water erosion.

Foothills indicated that it will strip topsoil to colour/textural change where a clear transition occurs between the topsoil and subsoil. Where such transitions are not readily apparent, stripping will be

undertaken to depths designated on the construction alignment sheets. Foothills further indicated that final soil handling procedures will be developed once the route is finalized and the alignment sheets showing the handling procedures will be updated at that time.

With respect to native prairie areas, Foothills indicated that one of four soil handling procedures will be employed depending on site conditions. Blade width stripping will be employed wherever pulverization of the sod from right-of-way traffic can be controlled. Ditchline and workside stripping will be employed where pulverization of the sod layer cannot be avoided. Full width stripping will be used wherever microtopography is too rough to facilitate the storage and retrieval of topsoil from the sod layer without damage from scalping. Ditch and spoil side stripping may be used under the same conditions as full width stripping except where the sod mat is strong enough to withstand workside traffic.

Problem soils, such as gravel subsoils and saline/sodic subsoils, require alternative soil handling procedures. Foothills indicated that it will use the three-lift soil handling procedure in areas where strongly contrasting differences in texture are encountered between the upper and lower subsoils and in cultivated soils exhibiting critical differences in salinity/sodicity. Because of the chemical similarities between the shallow topsoils and upper subsoils of most native prairie soils, overstripping of topsoils is being considered as an alternative to three-lift handling to deal with saline/sodic problems. Overstripping reduces the amount of sod layer disturbance relative to three-lift handling, and causes little change to the chemical characteristics of either the topsoil or upper subsoil. Given the salt tolerance of most native prairie plants, overstripping should not reduce the productivity of these soils for indigenous plants.

In order to minimize adverse effects under wet soil conditions, Foothills indicated that it would suspend right-of-way travel where rutting problems exceed acceptable levels, unless other appropriate techniques for reducing rutting (full-width stripping or geotextile blankets/swamp mats) can be employed. Foothills indicated that it considers rutting to be a problem where rutting depths in topsoils approach to within 25 mm (1 inch) of the B horizon or rutting penetrates the sod layer, reducing its structural integrity. With respect to the use of alternative techniques in native prairie areas where rutting problems persist, Foothills indicated that it would strip only the work side if the spoil side is competent enough to accept the storage and retrieval of spoil without scalping the sod layer.

Foothills indicated that it will determine soil compaction through visual differences in soil characteristics on and off the right-of-way and through random tests at intervals along the right-of-way. Should such comparisons indicate compaction problems, a multi-shanked ripper will be used to loosen the subsoil on the right-of-way prior to topsoil replacement.

With respect to pipeline construction through the SMRID, Foothills indicated that it will follow the measures outlined by the SMRID, including specific procedures for crossing each canal, lateral drain, water pipeline, and spillway.

Weather permitting, clean-up will occur immediately following backfilling operations. Foothills indicated that all grading will be undertaken with the understanding that original contours and drainage patterns, including those for seasonal wetlands, will be re-established, where practical, during clean-up. All grade cuts will be restored to stable conditions, approximating pre-construction conditions.

Views of the Board

The Board notes that Foothills intends to complete an environmental plans and procedures manual for the Wild Horse Pipeline. In order to determine the appropriateness of the environmental plans and procedures and to ensure consistency with those measures outlined in the application, the Board will require Foothills to submit for Board approval a copy of that manual prior to construction. The Board will also require Foothills to file updated alignment sheets showing the final soil handling procedures.

The Board notes that Foothills' criteria for determining soil handling practices in native prairie areas were developed with the goal of minimizing disturbance to native prairie areas. However, Foothills' intention under wet weather conditions to use either full width or workside topsoil stripping, as opposed to suspending right-of-way travel, is, in the Board's view, not consistent with those criteria. Therefore, the Board will require Foothills to ensure that vehicle and equipment traffic is temporarily suspended in native prairie areas under wet soil conditions until dry soil conditions exist, in lieu of full width or workside topsoil stripping.

4.3.2 Vegetation

Foothills indicated that a number of rare plant species are known or anticipated to occur in the project area. Foothills indicated that these species may be restricted to local areas with particularly suitable growing conditions or may occur sparsely over a large geographical area. Foothills has provided a list of the potential species and their associated habitats, based on distribution maps and known conditions within the vicinity of the proposed right-of-way.

Foothills stated that, although it is unlikely that a significant colony of rare/endangered species could be eliminated by the localized disturbance of the right-of-way, surveys for such species will be undertaken along the route once the alignment has been surveyed, and minor routing modifications will be made to avoid identified communities of importance. These surveys will be conducted by individuals with at least a Bachelor of Science degree in botany or range sciences, and five years of research/consulting experience in prairie ecosystems. The early botanical survey is planned to be completed by 10 June 1995, with the second survey to be completed by 31 July 1995.

In the event that important plant communities are encountered along the route, Foothills indicated that the surveyed area would be broadened on either side of the right-of-way for several hundred metres to investigate the nature of the community's distribution. If simple avoidance of the site is not practical, then special construction practices designed to protect the plant community will be implemented. Such approaches will be planned in detail to meet site-specific circumstances but may involve protection of plants using geotextile topped by a soil working surface or removal and replacement of sod blocks containing the plants of concern.

The majority of the proposed right-of-way will encounter native grasslands or improved native pastures with residual native species. Foothills submitted that an estimated 304 ha (751 acres) of

surface disturbance can be anticipated in natural or relatively natural vegetation communities. Foothills indicated that concerns over the incremental loss of native vegetation to agricultural and other land uses has increased greatly in recent years.

To minimize effects on these areas, Foothills indicated that, as a general rule, topsoil stripping in native prairie areas will be restricted to the ditchline and areas of the workside which will receive heavy traffic loads, and associated pulverization (see section 4.3.1 "Soils and Agriculture" for the criteria to be used in determining soil handling practices for native prairie areas). Where subsoil is stored directly on the sod layer, conventional clean-up buckets or hoes will be used to return all but 15 cm (6 inches) of subsoil/topsoil into the ditch or back onto the right-of-way. The remaining spoil/topsoil will then be retrieved using a clean-up bucket equipped with prairie protector blades to prevent sod scalping.

Foothills has identified seed mixes for native prairie/roadside ditches, tame pasture, and very sandy soils. Foothills indicated that the species in the seed mix for native prairie areas are native to southern Alberta with the exception of Reubens Canada bluegrass and Durar hard fescue which perform the same function as similar indigenous species. Environment Canada recommended that Foothills review its proposed seed mixes and that Foothills contact Alberta Agriculture for expert advice. Environment Canada further indicated that revegetation can only be effective with several seed mixes, one each for depressions, sandy areas, and the dry plains.

In response, Foothills indicated that a specific mix for depressions was not considered because it is anticipated that local native vegetation will invade and crowd out the less adapted seeded species in these areas. During the hearing, Foothills indicated that, based on advice from its consultant, the proposed seed mixes should be appropriate for all of the sites that it will encounter, including saline, wet and/or slough areas and wetland basins that may be dry at the time of seeding. Foothills stated that, depending on quantity and quality of seeds, there may be a requirement to adjust the seed mixes in certain years. Foothills further indicated that these seed mixes will be reviewed, in discussion with Public Lands (Alberta Agriculture), prior to construction.

Foothills indicated that weed growth will be controlled by establishing a good vegetative cover. Foothills indicated that it is very unlikely that any chemicals would be used on the right-of-way in native prairie areas. Foothills submitted that any weed problems would generally occur on agricultural land and that Foothills would deal with the local authorities (field agriculturalists) and the landowners to manage weed infestations that were reported.

Views of the Board

The Board will require Foothills to file, prior to the commencement of construction, the results of the designated plant species surveys referred to in the application, including the methodology, dates, and locations of the surveys and any corresponding avoidance or mitigative measures.

With respect to the proposed seed mixes, the Board notes that Environment Canada has expressed concerns in regard to the appropriateness of species composition and appropriateness to all site conditions. As well, Public Lands (Alberta Agriculture) has

not been afforded an opportunity to comment on the proposed seed mixes. However, the Board acknowledges Foothills' intention to review its proposed seed mixes prior to construction in consultation with Public Lands. The Board will require Foothills to: review its proposed seed mixes based on the availability of locally adapted species and site conditions (i.e. saline, wet/depressional areas, etc.); file with the Board for approval the proposed seed mixes including a rationale for each species not native to the area; and seek the opinion of the Province of Alberta on the acceptability of the proposed seed mixes and advise the Board of that opinion.

4.3.3 Wildlife

Diverse wildlife populations exist within the project area, particularly in association with river corridors, perennial wetlands, native grasslands, and topographic breaks such as coulee formations with perennial streams. Within the project area, 23 species of wildlife are considered to be at risk by Alberta Fish and Wildlife ("AFW"), with a total of 31 species considered to be species of concern. Of those species, 11 are of national importance and are designated by the Committee on the Status of Endangered Wildlife in Canada.

Foothills submitted that the wildlife resource descriptions and impact analysis included in its application are based largely on information obtained during the preparation of an environmental assessment and protection plan for the Express Pipeline Project proposed by Alberta Energy Company Ltd.¹ The 55 kilometres (34 miles) of the Wild Horse Pipeline extending north from Suffield to Princess that are not coincident with the Express Pipeline route have been evaluated for waterfowl and ungulate capability specifically in the context of this application. Foothills also indicated that many of the special status species discussed in relation to the area south of Suffield could potentially occur within this northern region.

Foothills stated that the planned construction schedule extends from 1 June 1996 to 15 October 1996 and coincides with the reproductive period for all of the wildlife species of concern in the project area, with the exception of Swift Foxes and the lekking period for upland game birds. Foothills indicated that the north to south construction direction will avoid the breeding season of some of the species, in particular the Swift Fox. Foothills stated that, while it acknowledges that a portion of construction will occur within the reproductive period, the surveys are designed to identify those localized habitat features that are supporting a significant component of the regional population for a particular species.

Foothills indicated that wildlife surveys will be conducted along the route and will be undertaken by individuals with at least a Bachelor of Science degree in biology and five years of research/consulting experience in prairie wildlife and their habitat requirements. Initial surveys would cover the entire proposed pipeline route and then the route would be stratified into specific zones where certain species

¹ The Board issued Amending Order AO-1-OH-1-93 on 8 October 1993 for a combined hearing of IPL's 24 June 1994 expansion application and an oil pipeline facilities application dated 30 October 1993 by Express Pipeline Ltd. (a wholly owned subsidiary of Alberta Energy Company Ltd.). By letter dated 15 November 1993, however, Express Pipeline withdrew its application.

will be more likely to occur and would require subsequent surveys. Foothills testified that it would complete a survey along the entire length of the route, including all native prairie areas.

Foothills submitted that specific surveys will be completed for Swift Fox dens, Ferruginous Hawk nests, Cooper Hawk nests, Burrowing Owl nests, Prairie Falcon nests, Peregrine Falcon nests, Sage Grouse leks, Sharp-tailed Grouse leks, Piping Plover nests, Mountain Plover nests, Loggerhead Shrike nests, Northern Leopard Frog colonies, egg laying sites of Great Plains Toads and Plains Spadefoot Toads, Eastern Short-horned Lizards and Prairie Rattlesnake hibernacula. With respect to the remaining designated status species, Foothills indicated that specific surveys are not planned because population sizes combined with the degree of sensitivity to project activity makes anticipated impacts low. However, Foothills stated that information about those species encountered during other surveys will be recorded.

Foothills indicated that potential impacts on wildlife from the development of the proposed Wild Horse Pipeline may result from one or a combination of: habitat loss, alteration, and fragmentation; sensory disturbance and habitat alienation; obstruction of daily or seasonal movements; and project-related mortalities.

With respect to the potential of habitat loss, alteration, and fragmentation, Foothills indicated that any reduction in tree and shrub habitat will occur in coulee formations. Foothills submitted that reductions in tree and shrub removal will be achieved through final routing modifications to minimize clearing, particularly on floodplain and wetland areas. Foothills stated that the greatest concern is the potential for pipeline construction activities to encounter and destroy a significant localized habitat feature of importance to a species with a designated status. With respect to sensory disturbance and habitat alienation, Foothills submitted that, during the reproductive period, many of the young-of-the-year will have limited mobility and will be unable to relocate away from the right-of-way activities. Outside of the reproductive period, Foothills indicated that species that reside in the area will experience a period of sensory disturbance, and can be reasonably expected to demonstrate displacement away from the right-of-way.

In mitigating the potential effects of habitat loss and sensory disturbance, Foothills stated that minor re-routing modifications can be implemented to minimize the disruption of important discrete habitat elements of concern within the study area (e.g. leks, Burrowing Owl nests, snake hibernacula), as the majority of such features are localized to the extent of being point features. Foothills further stated that, should a re-route not be possible, activities in the area of concern would be rescheduled to fall outside the period of habitat use, and restoration measures to recreate important habitat features would be developed in conjunction with AFW or Environment Canada.

With respect to routing modifications during the sensitive reproductive period, Foothills indicated that buffer distances to be used to avoid important reproductive habitats during periods of use will vary with terrain and vegetative cover. For flat treeless terrain, a 500 m (1640 ft) buffer will be maintained between the right-of-way and the habitat feature of concern for Swift Fox dens, Burrowing Owl nests, Ferruginous Hawk nests, and upland bird dancing grounds. If rolling topography or shrub cover provides visual screening of the right-of-way, appropriate buffer distances will likely be reduced subject to discussion with provincial and federal wildlife agencies. Foothills confirmed that route modifications will be undertaken whenever possible to prevent the physical destruction of breeding and

sensitive habitat features (e.g. leks, nest sites, burrows, hibernacula) encountered during the surveys in 1995. With the exception of the access required to reach the proposed meter station, no new roads will be developed on native prairie. In addition, Foothills indicated that temporary road locations will avoid identified sensitive wildlife habitats.

The pipeline route traverses the Sage Creek Reserve Release Area, within which the alignment approaches two Swift Fox den sites that were active during 1991. Foothills submitted that Swift Fox use dens on a daily basis year round. Releases have occurred in September and October to coincide with the period when young naturally disperse from their natal area. Foothills submitted that AFW indicated that if field surveys identified active dens, mitigation strategies would be conducted in consultation with AFW. Further, AFW recommended that habitat evaluations be undertaken during spring surveys within 1.6 km (1 mile) of active den sites. Environment Canada recommended that the pipeline right-of-way be placed 500 m (1640 ft) from any active dens or construction be delayed until July 15th by which time Swift Fox pups have emerged from the den and are more mobile and, therefore, less susceptible to disturbance. Foothills indicated that it plans to survey only the right-of-way and its immediate vicinity, as pipeline activity is not scheduled to occur in the area inhabited by Swift Foxes prior to July 15th, making surveys of more extensive areas unnecessary.

The proposed Wild Horse Pipeline crosses the core of Ferruginous Hawk habitat in Alberta. Foothills submitted that, through a review of existing information and based on field reconnaissance work, nesting areas along the proposed alignment exist in the vicinity of Tide Lake and the South Saskatchewan River. Environment Canada recommended that pipeline-related disturbances not occur within 500 m (1640 ft) of any active Ferruginous Hawk nest in order to avoid desertion during the early nesting period. After June 15th, when the young are present, disturbance should not occur within 100 m (328 ft) of the active nest to prevent premature fledging. As an alternative measure, Environment Canada recommended that nests within 500 m (1640 ft) of the proposed pipeline route be moved up to one kilometre (0.6 miles) from the existing nest site during the fall of 1995 or during February 1996. Foothills indicated that it would consider routing adjustments to avoid nesting and brood rearing period, delay construction to a non-sensitive period, or undertake nest relocation.

Foothills stated that the limiting factors for Burrowing Owls appear to be the loss of habitat and suitable burrows. Based on information supplied by Operation Burrowing Owl, several areas of the proposed alignment may closely approach or conflict with nests and nesting habitats. Foothills indicated that locational constraints were discussed with AFW to ensure that all active nest sites identified during the spring surveys would be subsequently avoided during the construction phase. AFW recommended that construction activity approach nesting Burrowing Owls no closer than 400 m (1312 ft) before June 15th and no closer than 200 m (656 ft) after June 15th. Environment Canada recommended that construction disturbance not occur within 500 m (1640 ft) of any active nest, or that construction be delayed until August 15th when the young can fly and are therefore less susceptible to disturbance. As an alternative measure, Environment Canada indicated that nests within 400 m (1312 ft) of the proposed construction route be replaced by artificial burrows within 500 m (1640 ft) of the original nest. These artificial burrows should be dug into suitable habitat during the fall of 1995 or in March 1996. Foothills indicated that it will consider route adjustments to avoid nests, delay of construction to non-sensitive period or undertake burrow replacements.

Environment Canada also made a number of recommendations in regard to survey specifications and mitigation measures for the Mountain Plover and the Loggerhead Shrike. For these species, Foothills indicated that it will consider routing adjustments or the delay of construction to a non-sensitive period.

With respect to the obstruction of daily or seasonal movements, Foothills submitted that information collected on the Prairie Rattlesnake indicate the presence of hibernacula on the South Saskatchewan River on either side of the proposed routing corridor, and movements of snakes across the right-of-way to these hibernacula could occur from mid-August to mid-September. Foothills stated that there is a moderately high potential for rattlesnakes to be encountered in large numbers by project personnel, particularly during the late summer when snake movements to hibernacula are occurring. Foothills indicated that open ditch restrictions will be implemented if construction activities are present in these areas from August 15th to September 30th. With respect to other wildlife species, Foothills indicated that, on pasturelands or tracts of native vegetation, breaks in spoil piles greater than 75 cm (29 inches) in height will be made at approximately 500 m (1640 ft) intervals along the right-of-way. These breaks will be 5 m (16 ft) in width, and will be located to coincide with any obvious wildlife trails, where possible.

With respect to project-related wildlife mortalities, Foothills indicated that it will implement a worker awareness program dealing with the local fauna, and will enforce strict regulations prohibiting the destruction or harassment of wildlife. In addition, Foothills indicated that construction personnel will not be permitted to have firearms or pets on the right-of-way, at worksites, or in Foothills' vehicles.

With respect to waterfowl, Foothills stated in its application that a spring survey of the proposed alignment will be undertaken and will focus on a number of features including waterfowl staging/nesting areas which have developed in previously dry wetland areas as a result of high snow years or wet summer seasons. In response to an information request, Foothills subsequently stated that it does not plan to include either specific surveys for waterfowl or any general survey for migratory birds in the 1995 work program. Foothills further indicated that, during the course of the initial survey, all observations will be recorded, including sightings of waterfowl and other migratory birds.

Foothills submitted that the potential environmental effects on waterfowl will be limited to those areas where project activity will occur in close proximity to waterbodies. Foothills further submitted that the effects on waterfowl are expected to be slight, given the limited amount of productive waterfowl habitat traversed by the pipeline route, that the route closely approaches standing waterbodies expected to retain water beyond the period of spring run-off in only a few instances, and that project activity will not encounter the majority of the those waterbodies until mid-July or later.

Environment Canada recommended that Foothills survey the water bodies within 200 m (656 ft) of the pipeline right-of-way for migratory birds. Environment Canada further indicated that, in order to minimize disturbance to breeding and migrating waterfowl, pipeline construction should be not less than 200 m from the wetted perimeter of any water bodies containing migratory birds or that construction be delayed until after July 15th. Foothills submitted that it does not believe that Environment Canada's recommendation can be practically implemented if interpreted literally. Foothills indicated, for example, that if it was required to maintain a distance greater than 200 m from the wetted perimeter of water bodies in a year where seasonal conditions create numerous temporary

waterbodies, the ability of the project to proceed in a practical, responsive, and cost effective manner would be severely impaired. Foothills stated that it intends to hold further discussions with AFW personnel and Environment Canada to clarify the interpretation of the recommendation concerning migratory birds.

Foothills indicated that, with the exception of Rush Lake, both the wetland community at Robinson's Coulee and at Milk River Lake are not true wetland complexes, in that they do not have a strong emergent growth along the fringes and would not support nesting waterfowl. Foothills further testified that these areas provide staging areas for migratory birds when they might be "loafing" in the spring or fall, but they are not considered to be productive or reproductive areas for waterfowl. Foothills submitted that, before and during migration, waterfowl aggregate in large numbers in staging areas, and that in those circumstances a single disturbance within a staging area could conceivably affect a relatively large proportion of the population. However, Foothills submitted that ground based surveys for these areas will determine whether they are productive from a waterfowl or other species perspective.

Views of the Board

The Board acknowledges Foothills' commitment to complete designated wildlife species surveys prior to the commencement of construction. However, the Board notes that Environment Canada and AFW have made a number of recommendations in relation to designated wildlife species. The Board will require Foothills to file the results of the designated wildlife species surveys referred to in the application, including the methodology, dates, and locations of the surveys and any corresponding avoidance or mitigative measures. The Board will also require Foothills to seek the opinion of Environment Canada and the Province of Alberta on the acceptability of the avoidance or mitigative measures and advise the Board of those opinions. The Board will further require Foothills to file, prior to the commencement of construction, updated alignment sheets showing the significant wildlife areas.

The Board notes that Foothills will not be completing surveys for a number of designated status species, as the anticipated impacts on these species are considered to be low. However, the Board notes that the construction schedule coincides with the reproductive period of most wildlife species. Therefore, the Board will require Foothills to ensure, during construction, that significant habitat features for wildlife species with a designated status be avoided if the species is present at the time of construction, and that avoidance measures be developed in consultation with the appropriate regulatory agencies. The Board will further require that significant habitat features/specialized habitat for wildlife with a designated status absent at the time of construction, plants with a designated status, and all raptors be avoided, relocated, or restored in consultation with appropriate regulatory agencies.

With respect to waterfowl, the Board notes that Environment Canada recommended that Foothills survey the water bodies within 200 m (656 ft) of the pipeline right-of-way for migratory birds. Environment Canada also recommended that Foothills restrict pipeline construction to 200 m from the wetted perimeter of any waterbodies

containing migratory birds or delay construction until after July 15th. The Board notes that, in order to minimize/mitigate any effects of pipeline construction on waterfowl, a confirmation of the presence or absence of waterfowl along the proposed route is required.

The Board will require Foothills to confirm prior to the commencement of construction: the presence (or absence) of waterbodies within 200 m of the pipeline right-of-way for waterfowl, only for that portion of the route to be constructed prior to July 15th; and the presence (or absence) of waterfowl habitat (breeding and migratory) for that portion of the proposed pipeline route (right-of-way only) to be constructed after July 15th. Based on those results, the Board will require Foothills to file for approval the mitigative measures it proposes to minimize disturbance to breeding and migrating waterfowl. The Board will also require Foothills to seek the opinion of Environment Canada on the acceptability of the mitigative measures and advise the Board of that opinion.

4.3.4 Fisheries and Hydrology

The proposed Wild Horse Pipeline route crosses areas lying within the Red Deer, South Saskatchewan, and Milk River watersheds. Seven named streams, two named shallow lakes, 19 unnamed seasonal watercourses, and a number of ephemeral ponds and wetlands are crossed by the proposed pipeline route.

Foothills indicated that the route was selected in 1991 and 1992 during a prolonged dry period in southern Alberta. As a result, the route crosses shallow lakes and wetlands that were dry in 1992 but currently hold water due to the recent wetter conditions. Foothills submitted that re-routing to avoid these lakes and wetlands will be considered prior to final route selection. Should an acceptable re-route to avoid Rush Lake and Milk River Lake prove difficult, Foothills indicated that it would provide the Board with an assessment of potential environmental effects and directly related social effects of construction in those wetland areas, along with the measures that would be implemented to mitigate any anticipated effects of construction.

The South Saskatchewan River is the single major watercourse that would be crossed by the Wild Horse Pipeline. Several spring spawning fish species, including sturgeon, walleye, sauger, pike, goldeye, and a variety of suckers, are known to occur in the river, and there is the potential that they reside in the vicinity of the crossing area on a year-round basis. Foothills indicated that discussions with AFW suggest that some of the larger streams may support spring spawning activities in their lower reaches, although actual survey data are very limited.

Foothills indicated that, to protect spawning areas within the South Saskatchewan River during their active period, AFW has imposed a restriction on in-stream activities from April 15th to August 1st. Foothills submitted that several of the larger named creeks, such as Seven Persons, Peigan, Manyberries, and possibly Sage, support sufficient spring and early summer flows to provide adequate habitat for several fish species, and connect to either large lakes or river systems that would offer adjoining late summer and overwintering habitats. To protect spawning fish in these named streams,

Foothills indicated that in-stream construction activities are not to occur between April 15th and July 15th, unless otherwise authorized by AFW.

Foothills indicated that pipe installation activities at most crossings will encounter a dry channel, or intermittent standing water, and will not restrict downstream flows. At such crossings, the pipeline will be installed using standard open cut techniques, without the use of flumes or dam-and-pump systems. Any water crossing (with the exception of the South Saskatchewan River) supporting flows in excess of 0.1 m³/sec (3.5 ft³/sec) will be executed using a flume or dam-and-pump system to maintain clean downstream flows.

Foothills submitted that several standard measures will be employed at crossings to reduce sediment loading. At all crossings supporting standing or flowing water, bridge spans or large culverts capped with local spoil will be installed to support right-of-way traffic. In addition, all grading at crossings will be directed away from the watercourse, and trench spoil taken from the channels of watercourse (other than the South Saskatchewan River) will be stored outside the channel, beyond the high water mark of the watercourse. Where required, sumps or bermed areas will be constructed on extra workspace to contain the saturated spoil excavated from the stream channel. At the South Saskatchewan River channel, saturated spoil will be contained in bermed areas on dry bars, islands, or the shoreline, wherever possible, to reduce needless sediment loading of the river from spoil piles. In addition, silt fences will be installed, where appropriate, on the approach slopes to the river during construction to prevent sediment-laden run-off from entering the river during heavy rains. Foothills submitted that a bridge span will not be installed at this river, as all vehicles and equipment will be routed over the river on existing road systems.

Foothills indicated that it plans to complete survey level investigations at all stream crossings in early spring of the year before construction. Foothills submitted that information gathered will include fish species present, water flow and quality data, and bed and bank conditions. Foothills also indicated that additional studies will be completed at the South Saskatchewan River and will be aimed at determining species present and approximate numbers, seasonal use of habitats near the crossing, physical details of habitats in the vicinity of the crossing, and water quality data.

Foothills further indicated that, upon completion of the studies, it will be in a position to determine the sensitivity of the streams to pipeline activity and the potential for any significant impacts and will be able to select measures to mitigate potential impacts. However, Foothills indicated that discussions with AFW and DFO and the examination of crossings did not result in the identification of factors that would suggest the crossing locations were inappropriate.

DFO has concluded that the project has the potential to affect fish and fish habitat. DFO further indicated that the effects of the proposed project on fish and fish habitat can be mitigated to insignificance provided the Applicant adequately addresses the information requirements and concerns outlined in its letter dated 15 September 1994. DFO raised concerns with respect to adequate erosion control, site specific details of watercourse crossings, construction methods, site-specific mitigation strategies, and hydrostatic testing. In response, Foothills provided commitments to address those concerns, including a commitment to include DFO in the review of the survey results.

Foothills indicated that water crossing activities will be suspended where heavy rain results in the accumulation and flow of surface run-off on the right-of-way, and presents the potential for sediment laden water to enter a flowing watercourse. As well, because of the fine-textured characteristic of channel substrates to be encountered in most water crossings in the project area, the construction of temporary sumps/berms to contain saturated channel spoil will be a standard requirement at all water crossings supporting flow at the time of construction.

Foothills indicated that it intends to restore fish habitats to pre-construction conditions to prevent a net loss of habitat capability. Foothills submitted that rock rip-rap or cribwalls will be used for the reconstruction of vertical bank structure, shrub transplants or brush layering within cribwalls will be used, and in-stream channel characteristics will be restored. For those watercourses supporting low bank structure and low herbaceous vegetation, banks will be restored to stable contours and revegetated with a stabilizing grass cover.

With respect to hydrostatic testing of the pipeline, Foothills submitted that it is likely that test water will be drawn from the South Saskatchewan River and released to the Little Sandhill Creek drainage area and Milk River Lake. Foothills testified that it will ensure that test water is released in a manner that will not cause accelerated erosion.

DFO indicated that Foothills should develop site-specific mitigation measures for the withdrawal and discharge of hydrostatic testing water to ensure no net loss of the productive capacity of fish habitat. In response, Foothills stated that it will inform the Board and DFO regarding details of sources of water for hydrostatic testing, of the maximum water withdrawal rates and/or amounts, of expected impacts on fish or fish habitat, and of proposed mitigation measures related to those potential impacts. Foothills also indicated that it will develop site-specific measures for the withdrawal and discharge of hydrostatic test water to ensure no net loss of the productive capacity of fish habitat.

Foothills indicated that it will include sampling of hydrostatic test water prior to discharge as part of its testing program. Details of testing will be based on discussions with DFO after final discharge sites have been determined. Foothills testified that, as a minimum, it will test for metals, total suspended solids, pH, electrical conductivity, and oil and grease.

Foothills undertook to notify downstream water users of the proposed activities, including those downstream water users having the potential to be affected by either pipeline construction at water crossings or water withdrawal for hydrostatic testing. Foothills' policy with regard to addressing concerns or complaints associated with water quality would be to assess the nature of the complaint, to take steps to alleviate the conditions leading to the complaint, and to compensate downstream water users if necessary.

Views of the Board

The Board acknowledges Foothills' commitment to complete survey level investigations at all stream crossings, with additional studies planned for the South Saskatchewan River crossing site. The Board will require Foothills to file, for approval, the results of the fisheries studies referred to in the application, including the methodology, dates, and locations of the surveys, the corresponding mitigative and

restorative measures, descriptions and construction designs for each of the crossing methods, and in-stream timing restrictions, and seek the opinion of DFO on the acceptability of the avoidance or mitigative measures and advise the Board of that opinion.

With respect to Rush Lake, Milk River Lake, and any other waterbodies with the potential to hold water well into the late summer period, the Board notes that the information requirements are addressed under section 4.3.3 "Wildlife".

The Board acknowledges Foothills' commitment to inform the Board of site-specific measures for the withdrawal and discharge of hydrostatic test water. The Board will require Foothills to file, prior to the commencement of hydrostatic testing, the sources of water for hydrostatic testing, a description of its test water sampling procedures, the discharge locations, and the site-specific measures for the withdrawal and discharge of hydrostatic test water to ensure no net loss of the productive capacity of fish habitat.

4.3.5 Environmentally Significant Areas

Foothills indicated that, in 1990 and 1991, the Southeast Regional Planning Commission and Alberta Forestry, Lands and Wildlife contracted Cottonwood Consultants Ltd. to undertake a study of environmentally significant areas within the Counties of Forty Mile, Newell and the Municipal District of Cypress. The environmentally significant areas are described in terms of location, features, degree and primary reason for significance, and management considerations. Foothills indicated that the management considerations identified for the environmentally significant areas traversed by the proposed pipeline route include: maintaining stable water levels; modifying grazing regimes; avoiding cultivation of grasslands; avoiding disturbance of some birds of prey during nesting; maintaining grasslands; protecting snake hibernacula; avoiding adverse effects on short-horned lizards and certain rare plants; and avoiding disturbance of grouse on dancing grounds. Foothills indicated that these issues were considered in the application and the responses to Board information requests.

Foothills indicated that it has consulted with the provincial authorities and, to the extent that the provincial authorities are responsible for the environmental resources that are protected or identified as occurring within those environmentally sensitive areas, they have given advice on the necessary procedures and requirements. Foothills stated that it intends to maintain close contact with AFW personnel.

Views of the Board

The Board is satisfied that Foothills has and will continue to address management considerations identified for the environmentally significant areas by continuing its consultations with AFW.

4.3.6 Archaeological and Paleontological Resources

The Wild Horse Pipeline right-of-way commences at a point immediately south of the Dinosaur Provincial Park, a World Heritage Site. Because the proposed route encounters a number of areas where bedrock is exposed or lies close to the surface, the Royal Tyrell Museum has requested that a paleontological assessment of the route be completed. Specific requirements for that assessment will be established by the Royal Tyrell Museum and will be forwarded to Foothills through Alberta Culture and Multiculturalism. Foothills indicated that it will take actions necessary to protect or salvage paleontological resources as directed by provincial authorities or as otherwise agreed.

Foothills submitted that the Wild Horse Pipeline project was referred to the Historic Sites and Archives Service, Alberta Community Development on 10 June 1992. The proposed pipeline route was assessed by two archaeological permit holders. During the assessment of the right-of-way 96 new sites were discovered. Foothills has provided a summary of these sites, including the permit holders' recommendations for mitigative efforts and has advised that Alberta Community Development will retain the permit holders to implement mitigative measures.

Where a previously unidentified archaeological or heritage site is encountered during construction, Foothills indicated that the Cultural Facilities and Historical Resources Division of Alberta Community Development will be informed and no further work will be undertaken in the immediate vicinity of the site until it is examined by a qualified archaeologist, and permission to proceed is granted by the above noted authority.

Views of the Board

The Board will require Foothills to file, prior to the commencement of construction, the results of the paleontological assessment, including any corresponding avoidance or mitigative measures. In addition, the Board will require Foothills to seek the opinion of the Province of Alberta on the acceptability of that assessment.

4.3.7 Meter Station

Foothills indicated that site requirements for the meter station include a total site area of 1.09 ha (2.7 acres). The proposed meter station site is native prairie and is currently used as pasture. Foothills indicated that there have been no specific environmental studies related to the location of the meter station. Foothills testified that the meter station lies directly on the route, and any examination of the route at that point would have included an examination of the general area in which the meter station would be located. Foothills submitted that conditions were homogeneous for such a long distance on either side of the chosen site that there would not have been much difference if another had been selected.

Foothills submitted that it cannot confirm that no wildlife or plant species with a designated status could be affected by the proposed meter station and associated access road. Foothills also indicated that any of the species that have been identified in the southern portion of the route with a designated status could potentially occur in that area. Foothills stated that surveys for wildlife and plants will

include the access road and the meter station area. The meter station would be included with the pipeline alignment and the distance of surveys would be dependent on the species in question.

Should the results of the surveys indicate the presence of significant habitat, Foothills indicated that it would look at the potential of a possible relocation for the meter station. Foothills testified that it has some flexibility in the location and in the timing of construction. If the meter station site could not be moved, Foothills indicated that it could develop artificial nest structures for certain species.

Views of the Board

The Board acknowledges Foothills' intention to include the meter station site in the scope of the surveys to be undertaken along the pipeline alignment for plants and wildlife with a designated status. Therefore, the requirements with respect to the surveys outlined by the Board under sections 4.3.2 "Vegetation" and 4.3.3 "Wildlife" would apply to the proposed meter station site.

4.3.8 Environmental Inspection and Post-Construction Monitoring

Foothills indicated that during construction it will monitor and inspect the work carried out by construction contractors. Inspection will be the responsibility of a project manager supported by a chief inspector, site project engineer, environmental coordinator and a staff of activity inspectors. Foothills indicated that all of those individuals will have the authority to stop work if work practices or site conditions threaten public safety and/or important environmental resources.

Foothills submitted that post-construction monitoring will focus on the success of revegetation efforts, detection of erosion on or near the right-of-way, and the stability of stream beds and banks. These areas will be monitored intensively during the first two growing seasons to identify problems and deal with them at an early stage. Once a suitable vegetative cover has been established, monitoring frequency will be reduced. Timing restrictions that were put in place during the construction period will be retained during operational activities except in emergency situations.

Views of the Board

The Board is of the view that Foothills should, prior to the commencement of construction of the Wild Horse Pipeline, file with the Board an updated Environmental Issues List which will facilitate the tracking of the various issues requiring resolution. In order to determine whether the environmental objectives have been achieved, the Board will require Foothills to file a post-construction environmental as-built report for the new pipeline within six months of the in-service date. The Board will also require Foothills to file similar reports by December 31st following each of the first two full growing seasons after construction.

4.3.9 Views of the Board - Summary

The Board accepts the environmental information provided by Foothills with regard to the potentially adverse environmental effects which may result from the construction and operation of the proposed pipeline facilities. However, the Board notes that detailed information will be required with respect to wildlife and plants with a designated status, fisheries, wetlands/waterbodies, and paleontological resources. With the exception of waterfowl, the Board acknowledges that Foothills is committed to undertaking surveys and/or studies to provide the Board with that information. The Board directs Foothills to confirm the presence or absence of waterfowl along the proposed route and to file updated information on proposed mitigation measures.

Furthermore, the Board accepts Foothills' mitigative measures and monitoring program. The Board recognizes that Foothills will provide proposed mitigation measures or provide further mitigation measures, for Board approval, based on the results of the above-noted surveys and/or studies.

The Board will require Foothills to file copies of all federal and provincial permits or authorizations which contain environmental conditions and to maintain, during construction, a file in the construction office containing such permits and authorizations. In addition, the Board would require Foothills, prior to construction, to file with the Board an update of the results of discussions with appropriate landowners, special interest groups, and regulatory agencies.

With respect to the use of route modifications as a mitigation technique, the Board notes that any route modification of the specific route identified in the application will require approval by the Board, as detailed in section 3.2 of these Reasons. The Board will also require specific information in relation to each route modification including: the results of public consultation; status of land acquisition; a photomosaic; and an environmental issues list identifying all relevant issues, the potential environmental effects, and associated mitigation measures.

Based on Foothills' commitments and proposed mitigative measures and the Board's proposed conditions, the Board is of the view that any potentially adverse environmental effects of the construction and operation of the Wild Horse Pipeline would be insignificant or mitigated to the level of insignificance.

EARP Screening

The Board conducted an environmental screening of the Wild Horse Pipeline project in compliance with the EARP Guidelines Order insofar as there was no duplication of the Board's own regulatory process. The Board has determined that the potentially adverse environmental effects that may be caused by the project and the social effects directly related to those environmental effects are insignificant or mitigable with known technology. This conclusion, outlined in a separate screening document, represents a finding pursuant to paragraph 12(c) of the EARP Guidelines Order.

4.4 Socio-Economic Matters

Foothills stated in its Socio-Economic Impact Assessment that its project implementation approach included programs aimed at: demonstrating positive socio-economic impacts; addressing affected residents' concerns; maintaining the integrity of local amenities; encouraging local employment and procurement; respecting the regional history, lifestyle, and geographic setting; and promoting orderly and controlled development. In addition to a Public Information Program, Foothills has undertaken to put in place an Orientation Program, an Opportunities Measures Program, and a Business Opportunities Program.

The Orientation Program, a training program for all those managing or working on the project, would promote awareness and commitment to the socio-economic practices and considerations for the project. This program has as its objectives the provision of employment opportunities for women and native people, and of business opportunities for native-owned corporations. The Business Opportunities Program is intended to give businesses in southeastern Alberta a fair and competitive opportunity to participate in the project. As well, Foothills has undertaken to monitor the results of these programs, and to take follow-up action where appropriate.

Foothills does not foresee any project-related, significant adverse socio-economic impacts that could not be mitigated. The Company's view is that the application of its special programs will result in positive benefits, particularly in the areas of enhanced employment for special groups and business opportunities for native and local contractors.

According to Foothills' summary of the issues raised by interested persons, the only socio-economic concerns relate to the impact of the proposed pipeline route on the potential for future residential development (three landowners) and the proximity of the proposed pipeline to an existing residence (one landowner). Foothills states that these matters will be further taken into account in consideration of possible modifications to the routing.

Views of the Board

The Board is of the opinion that Foothills' Socio-Economic Impact Assessment focusses on potentially significant issues in a comprehensive way, and adequately describes the likely project impacts, both positive and adverse. On the economics side, Foothills' proposed measures, if followed, should avoid any significant adverse effects, and should foster positive impacts. The area through which the pipeline is proposed to be built has experienced significant oil and gas activity. Thus, to the extent that there are economic opportunities, the local labour force and local businesses should be well positioned to access them.

Project construction would involve only short term activity and the total related workforce would represent approximately one per cent of the regional labour force. Any impacts on the regional infrastructure, businesses and labour market would likely be relatively minor. Given Foothills' commitment to avoid adverse socio-economic effects and promote positive ones, and to have in place monitoring and feedback processes, the Board is satisfied that the socio-economic impacts would be either

insignificant, or sufficiently minor so as to be readily amenable to standard mitigation measures.

Chapter 5

Toll and Tariff Matters

5.1 Toll Estimate

Foothills estimated the 1997 toll for service on the Wild Horse Pipeline, assuming a 100 percent load factor, to be \$0.086/Mcf (Cdn.). In accordance with the terms of section 4.1(d) of the Precedent Agreement for New Facilities, shippers have until 1 April 1995 to decide if the proposed tolls are acceptable. One tolling scenario discussed by Foothills was the possibility that shippers could assign their firm service agreements to NGT, which would then include the cost of the Wild Horse Pipeline in the NGT postage stamp toll. Foothills submitted that, if the volumes were tolled on a rolled-in basis with the NGT toll, the 1997 tolls on the NGT system would decrease by 0.5¢ to approximately \$0.306/Mcf. Foothills indicated that NGT had advised that it intends to seek regulatory approval from the Alberta Public Utilities Board ("APUB") prior to 1 April 1995 to include such assigned costs in its tolls. Under the terms of the Precedent Agreement, a shipper can terminate its contract for service on the Wild Horse Pipeline if an assignment to NGT is an essential element of its participation in the project and approval for such an arrangement is not obtained.

While Foothills has not applied for approval of a capital structure or rate of return for the Wild Horse Pipeline as part of this application, it has based its financial forecasts on a return on rate base of 10.64 percent comprised of financing with a 65/35 debt/equity ratio, with a return on equity of 12.75 percent and an interest rate on debt of 9.5 percent. Depreciation has been estimated at three percent per year and income taxes have been calculated on a flow-through basis.

5.2 Form of Tariff

Although Foothills has not filed an application under Part IV of the Act for approval of a tariff for the Wild Horse Pipeline, it was Foothills' evidence that it intends to use a cost of service tariff which would, in all material respects, be the same as its currently-approved tariff for the Prebuild (entitled "Phase I Gas Transportation Tariff" and referred to in these Reasons as the "Prebuild Tariff"). Foothills stated that any amendments to the tariff would be relatively minor and noted that the Special Charge and Incentive Rate of Return elements of the Prebuild Tariff would not be applicable to the Wild Horse tariff. Foothills stated that it intends to apply for approval of a tariff following certification of the project.

As noted in Chapter 1, it was Foothills' evidence that the Wild Horse Pipeline would not be connected to, or involve the use of, the existing Prebuild facilities. The Company stated that the tolls would be

calculated on a stand-alone basis and that no costs would be recovered from shippers on the Prebuild zones¹.

Views of the Board

While it was useful to the Board to understand the basis on which Foothills had prepared its financial forecasts for this project, the Board notes that Foothills did not make an application for approval of a tariff in this proceeding and intends to seek such approval at a later date. Accordingly, the Board has considered all information filed in this proceeding with respect to tolls and tariffs to be illustrative only for the purpose of determining an estimate of the likely tolls on the applied-for facilities. The Board will deal with the specific provisions of the tariff for the Wild Horse facilities when it has an application before it.

Since the acceptability of the tolls to the prospective shippers is one of the conditions of the precedent agreements, the Board expects that Foothills will seek approval of the Wild Horse tariff before firm service agreements are executed.

5.3 Project Financing

It was Foothills' evidence that it intends to finance the Wild Horse Pipeline on a stand-alone basis with recourse only to the project assets. ADOE and SoCal Edison expressed concern in argument that Foothills might seek financing for the Wild Horse project which would not limit the lenders' recourse solely to the project assets. ADOE argued that any recourse provided for under the financing for Wild Horse should be limited to the assets of that pipeline. SoCal Edison suggested that it would be inappropriate to expose shippers on the Prebuild zones to risks associated with a default occurring on these proposed facilities. Foothills replied that, while it is the Company's intention to finance the project on a non-recourse basis, the Company might choose an alternative method to secure the financing if that were not possible.

Views of The Board

The Board views this project as being separate and distinct from Foothills' existing facilities which are part of the Prebuild facilities of the ANGTS. Accordingly, it is appropriate that these separate facilities should not have the potential to become a financial burden on shippers using the existing ANGTS facilities. The Board is therefore of the view that the financing of these facilities should be arranged in a manner that is, to the greatest extent possible, separate and distinct from the financing of the Prebuild facilities. In no event are the Prebuild facilities to be used as security in the financing of the Wild Horse project.

¹ Under the terms of Foothills' existing tariff, the cost of service for each Prebuild zone is shared among the shippers in that zone on the basis of their zone allocable share of the costs. The zone allocable share of costs is calculated as the shipper's contracted firm service volume/distance units as a percentage of the total contracted firm service volume/distance units in the zone (rate schedule T1, para 11.1).

Chapter 6

Overall Gas Supply/Demand

6.1 Overall Supply

Foothills provided a study entitled "Gas Supply Review / Wild Horse Pipeline Project", prepared by Coles Gilbert Associates Ltd. ("Coles") and dated June 1994, as evidence of the overall adequacy of Canadian gas supply underpinning the proposed facilities.

Coles prepared annual forecasts of total domestic energy demand and domestic natural gas demand for the period 1996 to 2011. According to the study, domestic gas demand reaches 3,236 PJ per year (3.1 Tcf/yr) by 2011. For exports, Coles' estimate of gas demand is based on existing export capacity attaining an average load factor of 93 percent by 1997, or 2,810 PJ per year (2.67 Tcf/yr). Additional export capacity is assumed to come from the Foothills/Altamont project only, and amount to 250 PJ per year (0.24 Tcf/yr). This resulted in a total demand for Canadian natural gas of nearly 6,300 PJ per year (6 Tcf/yr) by the year 2011.

The study is qualitative in nature and relies, in part, on data prepared by the Board¹, particularly the estimate of ultimate resource potential. Using the demand projection for natural gas prepared by Coles, the study concludes that there could be sufficient gas to satisfy that demand using the Board's ultimate potential estimate for the Western Canada Sedimentary Basin ("WCSB") of $7.2 \cdot 10^{12} \text{m}^3$ (255 Tcf). The study also concludes that drilling levels of about 7,200 gas wells per year by the year 2011 would be required to meet the projected deliverability of $169 \cdot 10^9 \text{m}^3$ per year (6 Tcf/yr). The feasibility of drilling some 7,200 gas wells per year was based on economic factors prevailing in 1994. Coles estimates that about 81 percent of the Board's ultimate potential estimate would have to be discovered by 2011 to meet its forecast of demand.

Coles' methodology uses historical data to predict reserve additions per well and average deliverability per well, with some adjustments for basin maturity. Its base case was derived by averaging the assumptions of high and low parameters on reserve additions and deliverability. Coles further opined that the ultimate potential gas resource could be as large as $8.5 \cdot 10^{12} \text{m}^3$ (300 Tcf) with technological advances. The forecast of real plant gate natural gas prices is projected by Coles to reach \$2.45/MMBtu by the year 2000 and remain relatively constant thereafter.

The Board requested that Foothills extend the supply analysis to 2021, to be more consistent with the economic life of the pipeline. Foothills' response suggested that the resource requirements may be in excess of the Board's current estimate of ultimate potential, but close to Coles' high technology estimate.

No party expressed views on the supply study.

¹ *Natural Gas Market Assessment*, November 1993 and *Canadian Energy Supply and Demand 1990-2010*, June 1991.

Views of the Board

The Board considers the overall demand projection of 6,300 PJ per year (6 Tcf/yr) by 2011 to be reasonable and is satisfied that there will be sufficient overall gas supply to support the long-term utilization of the proposed Wild Horse Pipeline.

With regard to the Coles Study, the Board has the following comments:

- The study did not include a quantitative assessment of the economic viability of the drilling levels required to meet the projected deliverability.
- The study assumed that the ultimate conventional resource potential of the WCSB was relatively unconstrained (i.e. resources beyond the ultimate potential were considered to "exist" and drilling would always increase reserves). Furthermore, Coles excluded frontier gas and unconventional sources from the scope of its study.
- Coles adopted certain data published by the Board, such as ultimate resource potential and the level of unconnected gas reserves. In its various publications, the Board cautions that when an applicant or intervenor uses Board information it adopts that information as if it were its own. The Board expects the applicant or intervenor to satisfy itself that the data are reasonable in relation to the particular project.

In the Board's view, the study would have been more useful had it taken a more quantitative approach and included an evaluation of the Board's data.

6.2 Overall Markets

Foothills has applied to construct facilities which, in conjunction with the proposed Altamont facilities in the U.S., would provide shippers of Canadian gas with access to the proposed WMC at Muddy Creek in southwest Wyoming. The WMC, a joint venture of Tenneco Gas Marketing Company, Entech Inc., and Questar Corporation, is scheduled to commence operation in February 1995. As presently configured, the WMC would provide users access to several U.S. pipelines including those operated by Kern River, Northwest Pipeline, Questar Pipeline, Colorado Interstate, Overland Trails, and Overthrust Pipeline (Trailblazer) (refer to inset of Figure 1-1). The WMC will serve as a new pipeline header facility connecting those pipelines and provide bi-directional gas flow capability.

The WMC will provide users with a full-service centre for the marketing of natural gas. Services to be provided include: parking, peaking, and balancing which will provide the WMC users with access to short-term storage and additional gas supplies; title tracking, which provides the users with complete confidential records of their buying and selling transactions; a computerized information service which provides the users with regulatory news and a directory of suppliers, marketers and gas users; and electronic gas trading enabling gas traders to execute trades in seconds. Foothills submitted that the WMC will provide its users with access to new facilities and services to promote liquidity, real time responsiveness to attract new markets, accurate pricing based on actual transactions, a level playing field for all participants, and single-sourcing.

From the WMC, shippers will have access to markets in the Rocky Mountain region, the Pacific Northwest, the Midwest, Southern California, Nevada, Baja California, and other parts of northern Mexico (refer to Figure 6-1). Foothills maintained that those value-added services provided by the WMC will enhance the marketability of gas in these markets.

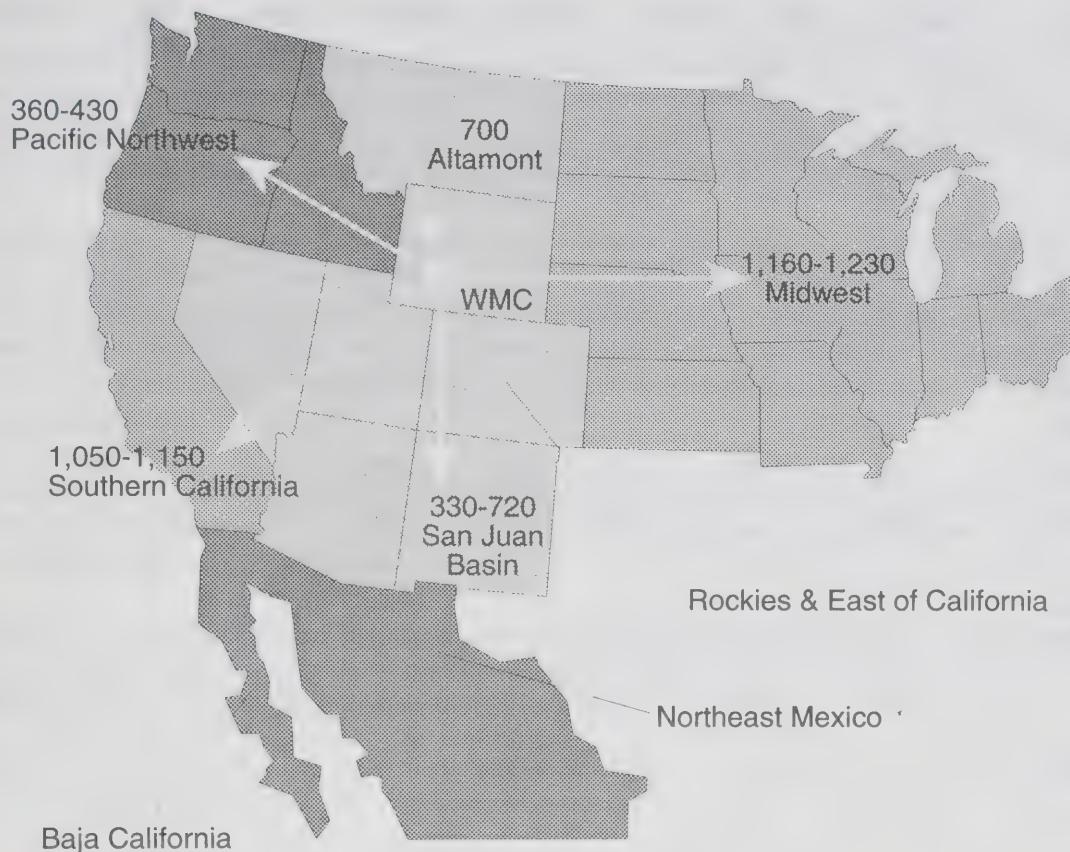
Foothills noted that the Wild Horse/Altamont project and the WMC respond to recent changes in the North American gas market and in the way those markets are regulated. Specifically, Foothills cited FERC Order 636 as a regulatory initiative designed to give gas consumers access to a greater number of gas suppliers, and vice-versa. Foothills argued that in this post-636 environment in which U.S. pipelines are no longer the holders of their own capacity, capacity is traded in an active secondary market among producers, supply aggregators and marketers, local distribution companies, and end users at trading hubs or market centres. These hubs also facilitate exchanges, swaps, and backhauls. Foothills noted that in this new era of competition in gas markets, among gas supply basins, and between transportation networks, shippers are looking for new ways to facilitate the marketing of their gas. Foothills indicated that those new ways include pipeline capacity release and the increasing nature of gas as a "commodity", both of which have resulted in the development of pricing reference centres or hubs. Foothills noted that the WMC will be responsive to this new environment by bringing buyers and sellers together in one place, thus increasing the efficiency of buying and selling gas by reducing transaction costs and by providing price discovery on a daily basis.

To demonstrate the existence of overall markets accessible from the WMC, Foothills provided a market study prepared by Dr. Paul Carpenter of Incentives Research Inc. Using various forecasts prepared by known firms or agencies as source data, minimum, maximum and average forecasts were developed for each region by end-use sector (residential/commercial, industrial, non-utility electric generation/cogeneration ("NUG/Cogen"), and utility electric generation ("UEG")). The results of this analysis appear in Table 6-1 (accompanying footnote lists referenced forecasts).

According to the market study, gas demand in the market areas accessible from the WMC (i.e. from the Rocky Mountain supply area) is forecast to increase, on average, by $53.8 \text{ } 10^6 \text{m}^3/\text{d}$ (1,900 MMcf/d) by 1997 and by $90.6 \text{ } 10^6 \text{m}^3/\text{d}$ (3,200 MMcf/d) by the year 2000 or, on average, by two percent annually from 1993 to the year 2000. The 1993 base is $611.9 \text{ } 10^6 \text{m}^3/\text{d}$ (21,600 MMcf/d). Substantial growth is expected in the California, Pacific Northwest, Midwest, and Mexican markets and is concentrated in the industrial, NUG, and cogeneration market sectors. The largest portion of this forecast growth (37 percent) is expected to occur in California (primarily Southern California).

The study concluded that if Canadian gas is to retain its current share of demand in the markets accessible from the Rocky Mountain supply area (i.e. approximately 29 percent in 1993/94) and to capture a modest share of the Rocky Mountain and Mexican markets, incremental Canadian export pipeline capacity of $16.1 \text{ } 10^6 \text{m}^3/\text{d}$ (570 MMcf/d) will be required by 1997 and $32.2 \text{ } 10^6 \text{m}^3/\text{d}$ (1,135 MMcf/d) by the year 2000. This implies that exports of Canadian natural gas will rise from $62.3 \text{ } 10^9 \text{m}^3/\text{yr}$ (2.2 Tcf/yr) in 1993 to (again using the average of the forecasts) $76.5 \text{ } 10^9 \text{m}^3/\text{yr}$ (2.7 Tcf/yr) and $82.2 \text{ } 10^9 \text{m}^3/\text{yr}$ (2.9 Tcf/yr) by 1997 and 2000, respectively. The minimum and maximum forecasts imply an export range of 70.8 to $82.2 \text{ } 10^9 \text{m}^3/\text{yr}$ (2.5 to 2.9 Tcf/yr) by 1997 and 73.7 to $93.5 \text{ } 10^9 \text{m}^3/\text{yr}$ (2.6 to 3.3 Tcf/yr) by 2000.

Figure 6-1
1997 Rocky Mountain Region Capacity to Geographic Market Regions
Accessible from the Proposed Western Market Center
(MMcf/d)



Take-away Capacity	2,900 - 3,530
Rocky Mountain Production	4,050
Rocky Mountain Demand	-1,780
Net Rocky Mountain Production	2,270
Available Outlet Capacity	630 - 1,260
Altamont @ 90% Load Factor	630

Table 6-1
Forecast Natural Gas Demand Growth in Altamont Market Area to the Year 2000
(MMcf/d)

	Calif.	PNW	Rockies	EOC ⁽¹⁾	Midwest	Baja Calif.	N.E. Mexico	TOTAL
<u>TOTAL</u>								
1993 Actual	4,966	1,043	1,667	558	13,338	0	0	21,572
Min. Growth	428	137	-117	117	162	287	110	1,123
Avg. Growth	1,208	526	98	287	632	287	194	3,231
Max. Growth	2,194	1,111	277	458	1,468	287	270	6,065
<u>Residential/Commerical</u>								
1993 Actual	2,107	480	944	318	8,298	0	0	12,147
Avg. Growth	221	31	48	20	102	0	0	423
<u>Industrial & NUG/Cogen</u>								
1993 Actual	1,580	505	632	108	4,813	0	0	7,638
Avg. Growth	805	306	-56	28	162	47	0	1,292
<u>UEG</u>								
1993 Actual	1,279	58	90	132	228	0	0	1,787
Avg. Growth	182	188	105	240	267	240	194	1,517

⁽¹⁾ East-of-California (Arizona and New Mexico)

Source: Incentives Research Inc.'s analysis based upon published forecasts prepared by:

- Gas Research Institute ("Baseline Projection of U.S. Energy Supply and Demand to 2010", March 1994);
- Natural Resources Canada ("Canadian Natural Gas Exports, 1992/93 Evaluation and Outlook", January 1994);
- U.S. Department of Energy ("Supplement to the Annual Energy Outlook 1994", March 1994);
- California gas distribution utilities ("1993 California Gas Report");
- California Energy Commission ("California Fuels Report", October 1993);
- Cambridge Energy Research Associates ("California Energy Watch", January 1994);
- Alberta Energy Resources Conservation Board ("Call for Information" submissions and Report on the Altamont and PGT Projects, June 1992); and
- Petroleum Finance Corporation ("Potential Demand for Natural Gas in Baja, California", February 1994).

The report concludes that, after allowing for Rocky Mountain production and demand, the region will have an available outlet capacity in 1997 of between $17.8 \text{ } 10^6 \text{m}^3/\text{d}$ (630 MMcf/d) to $35.7 \text{ } 10^6 \text{m}^3/\text{d}$ (1,260 MMcf/d), sufficient to support the additional Altamont volumes (refer back to Figure 6-1).

Views of Parties

ANG argued that the WMC is to be located in one of the largest U.S. supply basins and that it makes no economic sense for Canadian producers or marketers to move gas from a Canadian supply basin to another supply basin and then to arrange for downstream transportation to the market place. ANG further argued that the major U.S. market areas to be served by the proposed market centre are already accessible by existing pipelines transporting Canadian gas on a more economical basis.

Altamont noted that gas buying and selling are subject to the new dynamics of the market place, open access transportation, and market-oriented regulation and that Foothills has adapted its Wild Horse Pipeline in response to this new post-636 market environment. Altamont argued that the Wild Horse/Altamont facilities will provide shippers access to diverse markets, including the emerging Western U.S. and Baja California markets. Altamont concluded that the need for the facilities has been demonstrated.

Norcen et al argued that many of the market areas proposed to be served by Canadian gas via the WMC (i.e. California, the Pacific Northwest, and the Midwest) are areas already served by existing pipelines transporting Canadian gas.

Northern Border argued that Foothills has failed to provide a rigorous analysis to demonstrate that competitively-priced capacity will be available downstream of the WMC to access the U.S. Midwest as primary or secondary markets underpinning the applied-for facilities.

Views of the Board

The Board has considered Foothills' assessment of the overall markets accessible from the proposed WMC and is satisfied that, for the purpose of assessing the need for the proposed Wild Horse Pipeline, Foothills' forecast is reasonable. In making this determination, the Board noted that the market forecast prepared by Incentives Research Inc. relied upon a wide variety of forecasts for the target market areas.

The Board is of the view that sufficient overall market demand will exist in the market regions accessible from the WMC and that sufficient overall pipeline take-away capacity does or will exist to service the market regions accessible from that centre.

Chapter 7

Competitiveness of Wild Horse/Altamont Project

As indicated in Chapters 1 and 6, shippers on the Wild Horse/Altamont project would be able to access markets in the Rocky Mountain region, the Pacific Northwest, the Midwest, Southern California, Nevada, Baja California, and other parts of northern Mexico via the WMC. Foothills acknowledged that, with the exception of the Mexican markets, all markets that would be served by the Wild Horse/Altamont facilities are currently accessible to Canadian-sourced gas via existing transportation routes.

The Incentives Research Inc. market study prepared by Dr. Paul Carpenter (referred to in section 6.2) addressed the competitiveness of the Wild Horse/Altamont project.

Supply Costs

In the market study, Dr. Carpenter stated that the long-run success of Alberta producers shipping gas to the Rocky Mountain region depends partly on whether their production holds a cost advantage relative to Rocky Mountain supplies. He further stated that, with such an advantage, Alberta producers would be in a favourable competitive position to share in the available growth in demand in markets accessible from the WMC.

Based on published estimates, including those contained in the Board's *Canadian Energy Supply and Demand 1990-2010* report dated June 1991, Dr. Carpenter submitted that the full-cycle cost advantage of Alberta supplies is on the order of from \$0.60 to \$1.25 per GJ (or \$0.50 - \$1.00 per MMBtu (U.S.)) relative to Rocky Mountain production. He further stated that this cost advantage would permit Altamont shippers to remain highly competitive with supplies originating in the Rocky Mountain region despite the transportation distance to the region, and that this differential is an important rationale for the long-run economic viability of a pipeline connecting the two supply regions.

Price Differentials

Between April 1992 and July 1994, spot gas prices in the Rocky Mountain Basin were, on average, \$0.18 per MMBtu (U.S.) higher than at the Alberta Border. By comparison, the proposed toll on the Wild Horse/Altamont route would be \$0.45 per MMBtu (U.S.) assuming the Wild Horse Pipeline tolls are fully rolled-in with NGT. Since November 1992, spot price differentials have been consistently less than the proposed toll via Wild Horse/Altamont.

It was Dr. Carpenter's view that current differentials do not accurately reflect the future potential for intra-Alberta gas-on-gas competition. He stated that unless the pipeline infrastructure develops accordingly and in a timely fashion, the Alberta region is at risk of experiencing a return to surplus deliverability and artificially depressed wellhead prices.

Dr. Carpenter also submitted that the price of natural gas in the Rocky Mountain Basin will continue to converge with other U.S. producing basins. In response to a query by the Board, Dr. Carpenter stated that he would expect a further convergence (rise) in the price relative to the Henry Hub in the order of \$0.05 to \$0.10 per MMBtu (U.S.) following the establishment of the WMC. Dr. Carpenter noted that the convergence in supply basin prices is a result of increasing competition among basins and that market participants are extracting value in terms of assured availability of supply, reliability of service, and in trading facility. In discussing value-added factors, Dr. Carpenter identified the transaction cost advantage that would be available through the WMC in addition to the diversified opportunities that would be available. This, together with the combination of higher prices in Wyoming and lower prices in Alberta, would, in the view of Dr. Carpenter, create the necessary differentials to attract shippers and support the construction of the Wild Horse project.

Transportation Costs

The through transportation tolls to some of the key markets to be served by the Wild Horse/Altamont project are shown in Table 7-1.

Table 7-1
Cost of Transportation from Alberta to Selected U.S. Markets¹
(\$U.S. per Mcf)

	<u>Via Wild Horse/Altamont</u>		<u>Via Existing Route²</u>
	Maximum	Minimum	Maximum
Southern California	1.27 ³	0.61	0.78 (via PGT old ⁴), 0.97 (via PGT new ⁵)
Pacific Northwest	0.87	0.61	0.32 (via PGT old), 0.41 (via PGT new)
Midwest via Wyoming Interstate	1.58	0.65	0.81 (via TCPL) 1.06 (via Foothills and Northern Border)

1. All tolls include the NGT postage stamp rate.
2. Source: *California Natural Gas Market Review* and *U.S. Midwest Natural Gas Market Review* published by Brent Friedenborg and Associates Ltd.
3. Assumes Kern River toll of \$0.66/Mcf after potential expansion.
4. Via pre-1993 expansion PGT facilities
5. Via 1993 PGT expansion facilities.

Foothills stated that rate discounts are routinely available on nearly all U.S. pipelines. In the case of the Midwest market, for example, Dr. Carpenter suggested that the price of released capacity via Wild Horse/Altamont would fall between the maximum and minimum rates listed in Table 7-1 and would therefore be competitive with the maximum published tolls on Northern Border.

Views of Parties

ANG argued that the underlying economic feasibility, which would otherwise draw shipper support for the project, has not been established. ANG noted that the minimum tolls presented by Dr. Carpenter used zero or near zero tolls for most of the transportation that would be required downstream of Altamont. ANG argued that, even using such minimum tolls, the maximum producer netbacks are just barely competitive. With respect to the Alberta producer cost advantage argument advanced by Dr. Carpenter, ANG argued that "it would make little sense for producers in Alberta to squander any competitive advantage through the payment of additional transportation costs through a competing supply basin, rather than transporting the gas directly to the market place".

Northern Border argued that access to the Midwest market via the Wild Horse/Altamont route would be uncompetitive with the existing Northern Border route. Northern Border highlighted that the cost to ship gas to the Midwest via Wild Horse would be between \$0.42 to \$0.52 per Mcf (U.S.) more than via Northern Border for firm service and \$0.30 per Mcf (U.S.) more than Northern Border for interruptible service.

Views of the Board

As several parties noted, the Board in GH-5-89 identified a number of factors which would provide an indication of the economic feasibility of, in that case, applied-for expansion pipeline facilities, including evidence on potential competition from other supplies of natural gas, energy sources, and gas transportation facilities¹.

With respect to competing gas supplies, the Board notes that the Alberta supply cost estimates used by Foothills are out of date. The pre-release of Chapter 6 of the Board's *Canadian Energy Supply and Demand 1993-2010* Technical Report indicates that there may be no supply cost advantage to Alberta gas over Rocky Mountain gas². The Board, however, accepts that supply cost is not the only factor affecting competitiveness and that pipeline capacity constraints may also affect the pricing differentials between regions.

With respect to competing sources of energy, the Board notes that no explicit evidence was introduced in this proceeding. However, the Board assumes that an analysis of competing energy sources is implicit in the assessment of overall gas demand.

With respect to competing gas transportation systems, the Board notes the current cost disadvantage of the Wild Horse/Altamont route relative to existing pipelines on a full toll, firm transportation basis. The competitiveness of the Wild Horse/Altamont project will therefore largely depend on the ability of prospective gas purchasers to arrange transportation downstream of the WMC at competitive rates.

¹ GH-5-89 Reasons for Decision (TCPL facilities), Volume 1 "Tolling and Economic Feasibility" (November 1990), page 26.

² Chapter 6 "Natural Gas" was released in September 1994 in advance of the full Technical Report, which followed on 15 December 1994 (reference section 6.4 "Supply Cost").

The Board recognizes that there are inherent uncertainties in forecasting future competitiveness and that market conditions may change to alter the competitive position of the Wild Horse/Altamont project. The Board is of the view that the competitiveness of the Wild Horse/Altamont project will be confirmed by the willingness of individual shippers to sign long-term firm service agreements.

Chapter 8

Contractual Arrangements

8.1 Transportation Service Agreements

To obtain transportation service on the proposed facilities, Foothills has required that prospective shippers first execute a "Precedent Agreement for New Facilities" which specifies the terms and conditions which must be met before Foothills and the prospective shippers will enter into service agreements¹. Foothills filed several executed precedent agreements, which appended a pro forma service agreement. The pro forma service agreement is identical to the one contained in Foothills' Prebuild Tariff.

The precedent agreement provides that the execution of a service agreement is subject to:

- (i) Foothills obtaining, by 1 April 1995 or such later date as may be agreed to by Foothills, a certificate from the Board, in form and substance satisfactory to Foothills, enabling it to proceed toward the construction and operation of the new facilities [4.1(a)]; and
- (ii) the shipper providing Foothills, or making or obtaining, by 1 April 1995, or by such later date as may be agreed to by Foothills:
 - (a) all required financial assurances pursuant to Foothills' Prebuild Tariff [4.1(b)];
 - (b) all necessary upstream and downstream transportation arrangements [4.1(c)];
 - (c) all necessary gas import, export and other authorizations [4.1(c)]; and
 - (d) notification that the proposed tolls to be incurred by the shipper for the transportation of gas on Wild Horse are acceptable [4.1(d)].

In the precedent agreement, Foothills has also included provisions which would permit either Foothills or the shipper to be released from the precedent agreement in the event that:

- (i) the shipper is unable or unwilling to fulfil or waive its conditions precedent under the Precedent Agreement if requested to do so by Foothills prior to the specified date [4.2];
- (ii) the conditions are not fulfilled prior to the specified date [4.3]; or
- (iii) Foothills determines prior to 1 May 1995 that the capacity will not be fully subscribed; it is unable to obtain financing; or construction is not warranted because of a change in circumstances [4.4].

¹ The conditions of the precedent agreement are set out in Article 4 of that document. For the convenience of the reader, sub-article references have been provided in sections 8.1 and 8.2 of this chapter. For brevity, the conditions have been paraphrased in this chapter; for the precise contract language, reference should be made to the precedent agreements filed as Exhibits B-5 and B-17 in the GH-4-94 proceeding.

Foothills indicated that it has responded to the changes in the natural gas market place by offering shippers as much time as possible to finalize their market and supply arrangements and, accordingly, by requiring execution of binding firm service agreements only when major project expenditures start to be incurred (i.e. 18 months in advance of the in-service date). Foothills submitted, however, that it would not proceed with the project unless it was fully subscribed for a minimum term of 15 years. Foothills thereby acknowledged that commitments from the shippers will determine whether the project will proceed and in what timeframe.

By the close of the hearing, Foothills had filed executed precedent agreements for $13.65 \text{ } 10^6 \text{m}^3/\text{d}$ (481.6 MMcf/d) or approximately 65 percent of the applied-for capacity of $20.89 \text{ } 10^6 \text{m}^3/\text{d}$ (737.5 MMcf/d) (refer to Table 8-1).

Table 8-1
Prospective Shipper Commitments

<u>Prospective Shipper</u>	<u>Capacity Requested</u> (MMcf/d)
Altana Exploration Company	51.3
Chancellor Energy Resources Inc.	10.8
Inverness Petroleum Ltd.	5.1
Resource Planning Corporation	140.0
Tenneco Gas Marketing Company	97.4
Western Gas Resources Inc.	51.3
Amoco Canada Petroleum Company Limited	105.6
Conwest Exploration Company Limited	10.3
Northridge Gas Marketing Inc.	10.3
Total	481.6

Foothills indicated that negotiations were still ongoing with Bow Valley Energy Inc.; that Pacific Interstate Transmission Co. and Wascana Energy Marketing would not be entering into precedent agreements; and that Chevron U.S.A. Inc. would not be entering into a precedent agreement at this time. These four companies are among those that have executed precedent agreements with Altamont.

As noted in Chapter 5, Foothills also indicated that unless it is able to achieve full roll-in of the cost of service of the Wild Horse Pipeline into the cost of service of NGT through the assignment of the Wild Horse firm service agreements to NGT, the project may not proceed as the tolls would be unacceptable to some of the prospective shippers.

Views of Parties

Altamont supported the application and the arguments presented by Foothills. Altamont cited examples of several proceedings including proceedings related to ANG (GHW-2-91, 1993 Facilities Expansion), Westcoast Energy (GH-3-92, Southern Mainline Looping and GH-1-93, Pine River Gas Plant and Grizzly Pipeline Expansion), and Interprovincial Pipe Line Inc. (OH-1-93, Western Canada Expansion) where the Board had approved facilities applications with less than full compliance with the filing requirements. Altamont also submitted that in a natural gas market place characterized by "open access transportation networks and market-oriented regulation", restrictive, non-market responsive regulatory practices act as a barrier to the entry of new pipelines.

Several parties including ANG, Mobil, Norcen et al, PanCanadian, TransCanada, and ADOE expressed concern regarding the lack of binding and unconditional commitments to the project by prospective shippers, which they submitted have traditionally been required by the Board prior to rendering any decision on a gas pipeline facilities application. These parties were also concerned that, if the application were to be approved in its current form, the Board would be according excessive flexibility in its examination of this facilities application. Some of these parties argued that this would provide Foothills with an unfair advantage over other pipeline applicants who are required to meet the "traditional" filing requirements used by the Board.

Norcen et al, PanCanadian, and ADOE suggested that the Board should consider some form of an "at risk" provision in any approval that it might issue. They suggested that such a condition should hold Foothills or both Foothills and the Wild Horse shippers fully responsible for any costs not recovered due to less than full subscription of the pipeline capacity.

Views of the Board

The Board continues to believe that it should place considerable weight on the existence of binding and unconditional transportation service agreements for 100 percent of the applied-for capacity as a demonstration of shipper support for new gas pipeline facilities. To date, Foothills has not provided the Board with such agreements.

However, in the case of this application, the Board is prepared to accord Foothills some flexibility by not making the filing of binding service agreements a prerequisite to the granting of an approval. The Board would do so to enable Foothills to advance the project in conjunction with Altamont without prejudicing the target in-service date, while still allowing prospective shippers, competing in an increasingly short-term natural gas market place, time-flexibility in finalizing their transportation agreements.

The Board believes that, in the particular circumstances of this project, such a position on its part is consistent with allowing market and investment choices by shippers and the project sponsors to be made without undue regulatory interference. At the same time, the Board can be confident that the costs of the facilities will be fully covered for an extended period of time, given Foothills' position that it will not proceed with the project unless it is fully subscribed for a minimum term of 15 years. In view of

the foregoing, the Board has decided to condition any approval it might issue to require that, prior to the commencement of construction, Foothills file with the Board binding and unconditional service agreements which meet this criterion.

The Board notes that the pro forma service agreement filed in conjunction with the precedent agreements has been copied from Foothills' Prebuild Tariff and contains certain provisions unique to the Prebuild. For example, section 3.2 of the pro forma agreement addresses the possibility of Alaskan gas being transported through the Prebuild facilities. Given that the Wild Horse Pipeline would be a stand-alone facility separate and distinct from the ANGTS, any provisions dealing with the Prebuild would clearly be inappropriate. The Board therefore expects that the service agreements for the Wild Horse Pipeline will be amended accordingly.

8.2 Project-Specific Supply

The precedent agreements that have been signed by prospective shippers contain a number of provisions relating to project-specific supply and associated regulatory authorizations, wherein the shipper agrees as follows:

- (i) that it will apply for all regulatory authorizations required to remove gas from Alberta and to export that gas to the U.S. [3.1(a)], provide evidence to Foothills by 1 February 1995 that such applications have been filed [3.2], and obtain those authorizations by 1 April 1995 [4.1(b)]¹; and
- (ii) to intervene and appear before the Board in support of the Wild Horse facilities application and to provide Foothills with such information concerning its gas supply as may reasonably be required [3.1(b)].

Foothills has not obtained specific supply information from its prospective shippers; rather, it has presented only a general outline of supply from three shippers/producers (Altana Exploration Company, Chancellar Energy Resources Inc., and Inverness Petroleum Ltd.) representing less than 10 percent of the proposed capacity². The remaining shippers that have signed precedent agreements (typically marketing companies) presented no concrete evidence of supply.

Foothills advised during the hearing that it did not intend to seek any further shipper-specific supply information prior to executing the firm service agreements, except in cases of doubtful credit-worthiness or if a lender for the project requires this information. Furthermore, no shipper panel appeared at the hearing to provide supply evidence.

¹ The agreements do provide that these two deadlines (i.e. 1 February 1995 and 1 April 1995) could be postponed if mutually agreed to.

² Two other shippers/producers (Amoco Canada Petroleum Company Limited and Conwest Exploration Company Limited) did not provide any evidence of supply.

Views of the Board

While recognizing the need for some flexibility in supply arrangements, the Board is concerned about the lack of shipper-specific supply data being sought by Foothills prior to the execution of firm service agreements.

In this context, the Board notes that the access criteria set out in Foothills' Prebuild Tariff requires a prospective shipper to provide, prior to the execution of a firm service agreement in support of new facilities, "evidence to the satisfaction of Company that the Prospective Shipper has a secure and long term source of supply sufficient to permit the Prospective Shipper to fulfill its obligations under its gas sales arrangements during the term of firm service requested"¹.

The Board recognizes that the supply provisions set forth in both the precedent agreement and the access criteria contained in the Prebuild Tariff (which, as noted in Chapter 5, would serve as a model for the Wild Horse tariff) provide the Company with a degree of latitude in respect of the verification of shipper-specific supply. However, it appears to the Board that Foothills' hands-off approach to shipper-specific supply for this project is contrary to the intent of these provisions.

The Board expects that Foothills will exercise due diligence in screening each prospective shipper's supply arrangements, regardless of that particular shipper's credit-worthiness. Should any defaults arise due to supply shortfalls, the Board will examine Foothills' prudence in this regard in deciding the disposition of any unrecovered demand charges.

8.3 Project-Specific Markets

Neither Foothills nor any of its current prospective shippers have provided final details of the specific markets proposed to be served.

Altana Exploration Company, the Canadian subsidiary of Entech Inc., proposes to supply gas to two cogeneration facilities located in Texas and New York State through Entech's U.S. subsidiary, NARCO. Entech also plans to utilize the WMC to market a portion of its Canadian-sourced gas.

Chancellor Energy Resources Inc. intends to market its gas to serve markets in the western U.S. through the WMC.

Inverness Petroleum Ltd. indicated it has no firm market for its pipeline capacity and that it proposes to use the WMC until such time as a firm market develops for some or all of its capacity.

Resource Planning Corporation proposes to utilize its capacity to supply gas to electric power generation projects it is developing in Nevada and in other markets being developed in Mexico.

¹ Article 4.1(b)(ii) of Queueing Procedure (Sheet 26 of Prebuild Tariff).

Tenneco Gas Marketing Company ("Tenneco") will use its capacity to supplement its current supplies with Canadian supply. Tenneco cited the proposed Kern River expansion and the Baja California and California cogeneration projects as likely markets for the Canadian supply.

Western Gas Resources, Inc. proposes to use its capacity to supplement existing supplies of U.S.-sourced gas to meet the expected growth in its currently-served markets.

Amoco Canada Petroleum Company Limited, Conwest Exploration Company Limited, and Northridge Gas Marketing Inc. did not indicate the markets they propose to serve using their Wild Horse Pipeline capacity.

Views of Parties

Norcen et al expressed concern regarding the lack of project-specific market information. While supporting the application of a flexible approach to provision of such information, Norcen et al submitted that "there needs to be evidence on the record to demonstrate that the market requires the proposed facilities and that shippers are committed to the markets' long term need for facilities".

CAPP, in its letter of comment dated 22 September 1994, expressed a similar concern regarding the lack of project-specific market information.

In argument, Mobil, PanCanadian, TransCanada, and ADOE expressed concern regarding the lack of project-specific market information. These parties were concerned that the Board, in setting down for hearing what they considered to be a "deficient" application, was either changing the minimum filing requirements or was affording Foothills an unfair regulatory advantage by making the filing requirements in respect of the Wild Horse application less onerous than had been the case with respect to facilities applications in the past.

Mobil and Norcen et al argued that the Board should either call a second public hearing or re-open this proceeding, once the Applicant and prospective shippers have filed executed firm service agreements. Mobil argued that this would provide a public forum in which these shippers would be able to demonstrate supply availability and market need associated with their contracted Foothills capacities. Norcen et al submitted that such a procedure would give all parties the opportunity to examine the project-specific transportation arrangements.

Views of the Board

Foothills has not provided detailed project-specific market information in support of its application. As indicated in section 8.1, however, the Board agrees with Foothills that the natural gas market place has changed and is changing and that prospective shippers require additional flexibility in order to finalize market and transportation arrangements. Moreover, the Board is of the view that, in the absence of project-specific market and related contractual information, it can place a high degree of reliance on binding and unconditional firm service agreements as demonstrating the existence of those specific markets. In this regard, as also indicated in section 8.1, the Board will condition any approval it might issue to require that, prior to the commencement of construction, Foothills file with the Board binding and

unconditional service agreements with a minimum term of 15 years for the full capacity of the proposed pipeline.

The Board will also condition any approval it might issue to require that, prior to the commencement of construction, Foothills demonstrate to the Board's satisfaction that all necessary regulatory approvals are in place to permit the operation of the WMC in the manner described in the GH-4-94 proceeding.

If these two conditions are satisfied, the Board would accept the existence of the WMC as a proxy for project-specific markets.

8.4 Upstream and Downstream Transportation Arrangements

As indicated in Chapter 2, the Wild Horse Pipeline would connect upstream with the facilities of NGT at the high pressure outlet of NGT's Princess Compressor Station. According to Foothills, shippers will be required to enter into a standard NGT Firm Service Agreement which will be conditioned to permit either party to terminate the Schedule of Service by written notice on or before 1 April 1995. NGT is expected to file the necessary facilities application with the Alberta Energy Resources Conservation Board to meet the Wild Horse/Altamont project timing once the required NGT facilities can be identified. Construction of the required NGT facilities is expected to begin on 1 November 1995 for an in-service date of 1 November 1996.

The Wild Horse Pipeline would connect downstream with the proposed facilities of Altamont at a point on the international border near Wild Horse, Alberta. Foothills indicated that Altamont accepted an Optional Certificate issued by the FERC in August 1991. Shippers have entered into precedent agreements with Altamont for the full design capacity of the proposed pipeline. These precedent agreements contain provisions similar to those contained in the Wild Horse precedent agreements which would permit either party to be released from the agreement without penalty prior to 1 April 1995. Altamont anticipates mainline construction to commence in April 1996 for an in-service date of 1 November 1996.

Views of the Board

The Board is of the view that prospective Wild Horse shippers, in executing transportation agreements, acknowledge their responsibility to arrange for the appropriate upstream NGT and downstream Altamont transportation service. However, to ensure that the appropriate downstream facilities are available to deliver gas to the WMC, the Board believes that it would be appropriate to condition any approval it might issue to require Foothills to demonstrate, prior to the commencement of construction of the Wild Horse Pipeline, that all necessary regulatory approvals are in place in respect of the proposed Altamont facilities.

8.5 Project Timing

Foothills estimates that it can meet its projected 1 November 1996 in-service date if Board approval is received in the first quarter of 1995. As noted in Chapter 1, Foothills also projects that all field construction can occur in one season.

Altamont indicated that its certificate has a sunset date of 31 July 1996, by which time the approved facilities must be in service, unless FERC has granted an extension. Altamont indicated that given the current proposed in-service date of 1 November 1996, an extension to the sunset date would be required and applied for.

Foothills suggested that a date by which construction must have commenced of 30 June 1997 would be an appropriate sunset date to include in any approval the Board might issue. This would provide Foothills with the flexibility to accommodate a one-year delay in the in-service date of the Wild Horse/Altamont project.

Views of the Board

The Board is of the view that any approval it might issue should not be open-ended and, therefore, should contain an appropriate sunset provision. The Board is also of the view that Foothills should be afforded some flexibility to permit the Company to accommodate any unforeseen short-term delays including those associated with the in-service date of the downstream Altamont facilities. Accordingly, the Board will condition any approval it might issue such that the certificate will expire on 30 June 1997 if the construction of the Wild Horse Pipeline has not commenced by that date.

Chapter 9

Risk Allocation

Views of Parties

In its written evidence, Norcen et al suggested that, if approved, the facilities should be "certificated on an at-risk basis" similar to the FERC's Optional Certificate process. Under this process, facilities can be built without evidence of need (e.g. contracts); however, the only costs of the facilities that can be recovered in tolls are those related to the capacity that is contracted and then only for the term of the contract(s) unless the shippers agree otherwise. As discussed later in this chapter, during the proceeding several other parties expressed similar views that the project should be approved on an "at-risk" basis to ensure that the Applicant would bear the risk of shipper default and uncontracted capacity and the consequent non-recovery of demand charges.

Norcen et al submitted that the Wild Horse application is substantially deficient with respect to the information provided on project-specific supply, markets, transportation arrangements, and regulatory approvals. In their view, there are uncertainties associated with the assessment of economic feasibility such as serving a transportation hub instead of established markets. These concerns are exacerbated because Foothills seeks to build a new pipeline which will create an entirely new transportation path without the benefit of an established "track record" to contribute to the Board's understanding. Norcen et al submitted that it is these unique aspects of the project that contribute to the need for greater information and commitment, not less.

Norcen et al submitted that if the project is to go ahead without shipper commitment supporting the market's long term need for the facilities, then the Applicant must step forward and take responsibility for the risk.

Norcen et al cautioned that the effect of a potential roll-in strategy would be to shift the risk of the project away from the Applicant and the project shippers to all NGT shippers and that, therefore, at-risk provisions would likely be ineffective. Norcen et al further acknowledged that the roll-in issue is beyond the jurisdiction of the Board.

At the hearing, Norcen et al reiterated that the Board needs to consider an expedited procedure broadly similar to the Optional Certificate or "at-risk" procedure used by the FERC. They further stated that implementation of such a procedure would take significant further study and input from parties. However, they contended that if Foothills and other parties are correct in their assertion that the market demands such flexibility, then a procedure should be set in place but it should be made clear that the project proponents are at risk.

ANG expressed concern that the risk would be borne by NGT shippers whether or not they are users of the Wild Horse Pipeline because of a potential roll-in of Wild Horse tolls with NGT tolls. ANG asserted that Foothills requires Board certification at this stage in order to help the Company in its efforts to obtain firm service contracts. ANG considered that, in a competitive environment, it would

be inappropriate to confer such a regulatory advantage on a single pipeline. ANG urged the Board to ensure a level playing field by applying the same criteria to its assessment of all pipeline projects.

Altamont argued that Foothills' request involves no risk to producers since the project will not proceed unless shippers commit to 15-year transportation contracts for 100 percent of the capacity. Altamont added that shippers would not be forced to proceed if they are not ready with their market arrangements or if they are not satisfied with their downstream transportation arrangements.

PanCanadian supported an expedited process whereby conditional Board approval would place the burden of greater economic risk exposure squarely on the applicant. PanCanadian argued, however, that this would not be appropriate in the case of the Wild Horse application. PanCanadian submitted that Foothills wants a conditional approval, but only on its own terms, instead of being prepared to proceed with construction and assume exposure to any economic risk. PanCanadian suggested that this alone should eliminate Wild Horse as a reasonable candidate to create a new process model for "at-risk" expedited facility applications.

TCPL argued that Foothills seems to be seeking a more flexible regime analogous to the Optional Certificate process but is not prepared to accept an "at-risk" provision. TCPL further contended that if an "at-risk" condition is imposed by the Board, Foothills would, in large measure, circumvent that provision through assignment of all transportation contracts to NGT.

The ADOE recommended that the Board attach certificate conditions which ensure that the risk of under-subscription or the future under-utilization repose with the project proponents. The ADOE suggested that conditions be imposed ensuring that the costs of uncontracted capacity be borne by Foothills and its shippers alone and that Foothills be required to have 100 percent of the Wild Horse capacity subscribed prior to construction. The ADOE also recommended that Foothills be required to file with the Board evidence demonstrating compliance with the Board's conditions sufficiently in advance of construction to allow parties adequate time to review the information and provide comments to the Board.

Views of Applicant

In response to the Norcen et al proposal, Foothills noted that it was not prepared to accept an "at-risk" condition. Foothills argued that there are no existing shippers who would be impacted and that shippers with firm transportation commitments would not be at risk for unsubscribed capacity because the Wild Horse project would only proceed if long-term binding contracts for the full capacity have been executed prior to construction. Foothills further argued that it would only sign contracts with credit-worthy shippers. Foothills stated that financial assurance requirements would be the same as those identified in Section 5.8(b) of the General Terms and Conditions of Foothills' Prebuild Tariff, wherein it is stated that "in the case where service is being provided through New Facilities, [Foothills will] require shipper to provide Company financial assurances satisfactory to the Company". Foothills also noted that at no time had parties raised the possibility of an increase in rate of return to offset any possible "at-risk" provision.

As already indicated in Chapters 5 and 8, Foothills stated that some of its prospective shippers have advised that it would be unacceptable to have a stand-alone toll for Wild Horse. Foothills further

indicated that, as a result, the Wild Horse project is contingent on a roll-in of Wild Horse tolls with NGT tolls.

Views of the Board

Foothills has stated that the Wild Horse tolls will be determined on a stand-alone basis and that no Wild Horse costs will be allocated to any of the Prebuild zones (reference section 5.2). In addition, the Board has decided that Foothills shall not use the Prebuild facilities as security in the financing of the project (section 5.3). The Board is therefore of the view that the financial risks of the project will be borne by Foothills and the Wild Horse shippers.

Foothills has stated that it will not proceed with the Wild Horse project unless firm service agreements with a minimum term of 15 years are executed in respect of 100 percent of the Wild Horse capacity and that it will seek financial assurances from its shippers as provided in the General Terms and Conditions of the Company's Prebuild Tariff. If Foothills is unable to recover demand charges in the future, the Board will consider the circumstances at that time in a proceeding under Part IV of the Act to determine the disposition of such unrecovered charges.

The Board acknowledges the possibility that unrecovered demand charges may be borne by NGT shippers if NGT accepts the obligations of the Wild Horse shippers and Wild Horse tolls are rolled into NGT tolls. However, this issue will be decided by the APUB.

Economic Feasibility

The Board examines the economic feasibility of gas pipeline facilities by assessing the likelihood that the facilities will be used at a reasonable level over their economic life and the likelihood that the demand charges will be paid. To assist in its examination, the Board considers several factors which it deems to be relevant in such a determination.

As evidence that long-term gas supplies would be available to support the proposed facilities, Foothills submitted a supply study by Coles Gilbert Associates Ltd. (discussed in Chapter 6). The study concludes that there will be sufficient gas reserves in the WCSB to satisfy domestic and export demand to 2011. Coles estimated natural gas demand to reach about 6,300 PJ (6 Tcf) annually by 2011, consisting of 3,236 PJ (3.1 Tcf) of domestic demand and 3,060 PJ (2.9 Tcf) of exports. The study uses the Board's ultimate potential estimate for the WCSB of $7,216 \text{ } 10^9 \text{ m}^3$ (255 Tcf). The study also concludes that drilling levels of about 7,200 gas wells per year by the year 2011 would be required to meet the projected deliverability of $169 \text{ } 10^9 \text{ m}^3$ (6 Tcf) per year.

Foothills provided a study prepared by Dr. Paul Carpenter of Incentives Research Inc. (discussed in Chapters 6 and 7) to demonstrate the existence of overall export markets and the ability of Canadian-sourced gas delivered via Wild Horse/Altamont to compete for market share. According to the market study, gas demand in the market areas accessible from the WMC is forecast to grow at an average of 2 percent per year to the year 2000. The largest portion of this growth is forecast to occur in California with substantial growth also forecast in the Pacific Northwest, Midwest, and Mexican markets.

Foothills argued that the development of the WMC would provide value-added services which would enhance the marketability of gas in the western half of North America. The Company argued that the North American natural gas market has changed since the implementation of FERC Order 636 and today operates on a shorter-term basis. The development of the WMC would, according to Foothills, afford flexibility to shippers to operate in this market by providing simultaneous access to a number of key markets in the Western and Central U.S.

On a full toll, firm transportation basis, the routes via Wild Horse/Altamont to markets to be served by the WMC are relatively high cost compared to existing pipeline routes. Foothills contended, however, that rate discounts are routinely available on nearly all U.S. pipelines which would allow natural gas marketed via the WMC to be competitive.

Foothills has indicated that it would proceed with the Wild Horse project only if unconditional firm service agreements with a minimum term of 15 years for the full capacity were signed prior to construction.

Views of the Board

The Board has found that there is both overall supply and overall demand to support the long-term utilization of the applied-for pipeline. However, the Board has noted that

Foothills has not provided binding unconditional transportation agreements or detailed project-specific supply and market information in support of its application. These are among the elements which the Board has traditionally considered in determining economic feasibility.

The Board has considered the arguments of the proponents relating to the window of opportunity that may exist for this project, and is of the view that a conditional approval would be in the public interest.

The Board wishes to maintain a regulatory climate in which the project sponsors can continue to test the market. If the pipeline becomes fully subscribed for the minimum term of 15 years proposed by Foothills, and if the remaining conditions can also be fulfilled, then the project may proceed in a timely manner to meet the needs of the market place. Otherwise, the pipeline will not be constructed.

Beyond the subscription condition, the Board will require Foothills to demonstrate, prior to the commencement of construction, that all necessary regulatory approvals have been obtained in respect of the connecting downstream Altamont facilities. Similarly, the Board will require a demonstration that all necessary regulatory approvals have been obtained to permit the full operation of the proposed WMC in the manner described during the GH-4-94 proceeding. The Board will further require that the Prebuild facilities not be used as security in the financing of the project.

Given the evidence presented by the Applicant in the areas of supply and markets and given the fact that the project will not proceed unless the specified certificate conditions are met, the Board is satisfied that the Wild Horse Pipeline would be used at a reasonable level over its economic life and that the associated demand charges would be paid.

The Board evaluates each application on its own merits and on the basis of its particular circumstances. The Board has, in this instance, considered the unique nature of this project. Specifically, the Wild Horse project will be a new stand-alone pipeline as compared to an expansion of an existing system, and the Applicant has presented evidence to indicate that the proposed WMC will provide a unique opportunity, in the new market environment, to access a variety of export markets. In formulating its decision, the Board was influenced by the atypical circumstances of this project and the need for the industry and the regulator to be responsive to the evolving trends of the natural gas market place.

Chapter 11

Release for Construction

During cross-examination, ANG and Norcen et al asked Foothills to comment on whether parties should have an opportunity to review transportation contracts and provide comments to the Board prior to Foothills obtaining leave to construct. Foothills stated that it did not see the need for parties to review the contracts but that it was willing to accept a condition that the arrangements be satisfactory to the Board.

Foothills, in its argument, stated that it did "not agree that there should be any condition related to further intervenor review of its final transportation contracts, or indeed of any other of the certificate conditions imposed by the Board". Foothills further noted that the pro forma service agreements contained in its application are the same as the agreements utilized in the Prebuild zones and that transportation contracts are filed with the Board as a matter of routine and are always available for public review.

Views of Parties

Mobil argued that the application was nothing more than a "hunting licence" and that in its view the Board must conduct a second public hearing at such time that firm service agreements have been executed. Mobil further argued that a second hearing would permit the demonstration of both supply availability and market need in a public forum.

Norcen et al argued that, in addition to transportation arrangements, the assignment provisions proposed by Foothills between the Wild Horse shippers and NGT could be critical and should be part of a second phase of the hearing. Norcen et al, in response to a question from the Board, submitted that the inclusion of conditions to any certificate addressing the APUB roll-in and transportation agreements in lieu of future public examination of those circumstances would be inadequate.

TransCanada argued that a conditioned certificate requiring the filing of executed transportation contracts prior to construction is appropriate when other persuasive evidence of economic feasibility, including project-specific supply and market information, has been filed. TransCanada submitted that the Board did not have sufficient evidence before it to conclude that the Wild Horse facilities are economically feasible.

The ADOE, in its argument, requested that the Board instruct Foothills to file evidence demonstrating compliance with the Board's conditions. The ADOE further argued that such information should be made available in advance of construction in order to allow parties time to review the information and provide comments to the Board.

Views of the Board

Certificates of public convenience and necessity issued by the Board are generally made subject to appropriate conditions. In this instance, the Board has proposed a

condition related to the filing of transportation contracts which, in the Board's view, serves as a final check that the facilities, once constructed, will be used and useful.

The Board notes the concerns expressed by a number of parties that they be given an opportunity to comment on the material filed by Foothills related to transportation contracts.

The Board anticipates that the transportation contracts will, as Foothills has argued, accord substantially with the material filed in this proceeding. Nevertheless, given the concerns expressed by parties and the extent to which this point has been argued, the Board has determined that it would be appropriate to provide a mechanism by which parties, who so request in writing, be provided with an opportunity to review and comment upon the material filed by Foothills to comply with the proposed conditions concerning transportation contracts and regulatory approvals.

The Board considers that a "release for construction" process similar to that currently employed by TransCanada would be appropriate in this instance. Accordingly, should a certificate be issued in respect of this project, the Board directs Foothills to file with the Board, and to serve on any party who so requests in writing, a "release for construction" application wherein Foothills demonstrates that conditions 1, 3, and 4 (Appendix II) have been satisfied. Foothills shall prepare a list of parties for this purpose, which shall also be filed with the Board.

The Board would expect that parties upon whom a "release for construction" application is served will be in a position to provide comments promptly to the Board should they be so inclined. Once the Board has satisfied itself that all of the pre-construction conditions have been met, the Board would issue a letter to Foothills indicating that construction may proceed. Should the Board, upon its consideration of the information provided by Foothills and any comments filed by parties, determine that any additional procedure is required, the exact scope of that procedure would be determined on the basis of the particular circumstances before the Board at that time.

The Board will continue to ensure that relevant conditions which form part of any certificate that may be issued have been met prior to the commencement of construction, in order to assure itself that the approved facilities will be used and useful and, where Foothills seeks relief from full compliance with these conditions, that the granting of such relief is justified.

Chapter 12

Disposition

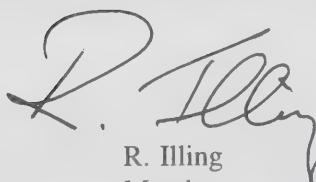
The foregoing chapters constitute our Reasons for Decision in respect of the application heard before the Board in the GH-4-94 proceeding. The Board has found that the proposed Wild Horse Pipeline is and will be required by the present and future public convenience and necessity, provided the conditions outlined in Appendix II are met. Therefore, the Board will recommend to the Governor in Council that a certificate be issued.



C. Bélanger
Presiding Member



R. Priddle
Member



R. Illing
Member

Calgary, Alberta
January 1995

Appendix I

List of Issues

1. The likelihood of the proposed Wild Horse Pipeline being used at a reasonable level over its economic life and the likelihood of the associated demand charges being paid.
2. The adequacy of gas supply to support the project.
3. The reasonableness of Foothills' natural gas demand forecast for markets accessible from the proposed Western Market Center in Wyoming, and the ability of Canadian-sourced gas to compete for market share.
4. The adequacy of upstream and downstream facilities and transportation arrangements.
5. The potential environmental effects and socio-economic effects of the proposed facilities.
6. The appropriateness of the location of the proposed facilities and the land rights acquisition.
7. The appropriateness of the design of the proposed facilities.
8. The adequacy of the public consultation process.
9. The appropriate terms and conditions to be included in any approval which may be granted.

Appendix II

Certificate Conditions

Unless the Board otherwise directs, the following conditions shall apply:

1. Foothills shall file with the Board, prior to the commencement of construction, executed unconditional firm service agreements with a minimum term of 15 years for the full capacity of the proposed Wild Horse Pipeline ($20.89 \text{ } 10^6 \text{ m}^3/\text{d}$ or 737.5 MMcf/d).
2. Foothills shall not use the Prebuild facilities as security in the financing of the Wild Horse project.
3. Foothills shall, prior to the commencement of construction, demonstrate to the Board's satisfaction that all necessary regulatory approvals are in place in respect of the proposed Altamont Gas Transmission Company pipeline.
4. Foothills shall, prior to the commencement of construction, demonstrate to the Board's satisfaction that all necessary regulatory approvals have been obtained to permit the full operation of the proposed Western Market Center in the manner described during the GH-4-94 proceeding.
5. Foothills shall, prior to the filing of plans, profiles and books of reference (pursuant to section 33 of the Act), file for Board approval any modifications that require a deviation from the specific route identified in the application. The information to be provided in respect of each such modification shall include:
 - (a) the results of public consultation with respect to the modification;
 - (b) the identity of any affected landowner(s) and the status of land acquisition;
 - (c) a photomosaic; and
 - (d) an environmental issues list identifying all relevant issues (i.e. land use, wildlife, fisheries, soils, archaeological, etc.), the potential environmental effects, and the associated mitigation measures to render those effects insignificant.
6. The planning, construction, and operation of the Wild Horse Pipeline shall be in accordance with the environmental terms and conditions set out in Schedule A.
7. This certificate shall expire on 30 June 1997 unless the construction and installation of the proposed Wild Horse Pipeline has commenced by that date.

Schedule A

Environmental Terms and Conditions

1. Foothills shall implement or cause to be implemented all of the policies, practices, recommendations, and procedures for the protection of the environment included in or referred to in its application, in its undertakings made to the Department of Fisheries and Oceans and Environment Canada, or as otherwise adduced in evidence before the Board in the GH-4-94 proceeding.

Prior to the Commencement of Construction

2. Foothills shall, at least two months prior to the commencement of construction, file with the Board for approval a copy of the "environmental plans and procedures manual" for the Wild Horse Pipeline as described in the proceeding.
3. Foothills shall, at least ten days prior to the commencement of construction of the proposed Wild Horse Pipeline, file with the Board a detailed construction schedule or schedules identifying major construction activities and shall notify the Board of all modifications to the schedule or schedules as they occur.
4. Foothills shall, at least thirty days prior to the commencement of construction of the proposed Wild Horse Pipeline, file with the Board a copy of an Environmental Issues List prepared in accordance with paragraph 28(1)(a) of the Board's *Onshore Pipeline Regulations* and, if any additional issues arise during construction, file an updated Environmental Issues List in accordance with subsection 28(2) of the *Onshore Pipeline Regulations* and take appropriate action to resolve those issues.
5. Foothills shall file with the Board, prior to the commencement of construction, updated alignment sheets showing the final soil handling procedures and the significant wildlife areas.
6. Foothills shall file with the Board:
 - (a) at least 10 working days prior to the commencement of construction, the results of the paleontological assessment referred to in the application, including any corresponding avoidance or mitigative measures, and seek the opinion of the Province of Alberta on the acceptability of the paleontological assessment and advise the Board of that opinion; and
 - (b) at least three months prior to the commencement of construction, the results of the designated plant species surveys referred to in the application, including the methodology, dates, and locations of the surveys, and any corresponding avoidance or mitigative measures.
7. Foothills shall, at least three months prior to the commencement of construction, file with the Board for approval:
 - (a) the results of the designated wildlife species surveys referred to in the application, including the methodology, dates, and locations of the surveys and any corresponding

avoidance or mitigative measures, and seek the opinion of Environment Canada and the Province of Alberta on the acceptability of the avoidance or mitigative measures and advise the Board of those opinions; and

- (b) the results of the fisheries studies referred to in the application, including the methodology, dates, and locations of the surveys, the corresponding mitigative and restorative measures, descriptions and construction designs of each of the crossing methods, and in-stream timing restrictions, and seek the opinion of the Department of Fisheries and Oceans on the acceptability of the avoidance or mitigative measures and advise the Board of that opinion.

8. Foothills shall, at least three months prior to the commencement of construction:

- (a) confirm with the Board the presence (or absence) of waterbodies within 200 metres of the pipeline right-of-way for waterfowl, for that portion of the route to be constructed prior to July 15th;
- (b) confirm with the Board the presence (or absence) of waterfowl habitat (breeding and migratory) for that portion of the proposed pipeline route (right-of-way only) to be constructed after July 15th;
- (c) based on the results of paragraphs (a) and (b), file with the Board for approval the mitigative measures to minimize disturbance to breeding and migrating waterfowl; and
- (d) seek the opinion of Environment Canada on the acceptability of the mitigative measures and advise the Board of that opinion.

9. Foothills shall, prior to the commencement of construction:

- (a) review its proposed seed mixes based on the availability of locally adapted species and site conditions (i.e. saline, wet/depressional areas, etc.);
- (b) file with the Board for approval the proposed seed mixes including a rationale for each species not native to the area; and
- (c) seek the opinion of the Province of Alberta on the acceptability of the proposed seed mixes and advise the Board of that opinion.

10. Foothills shall:

- (a) file with the Board, prior to the commencement of construction, copies of all federal and provincial permits or authorizations which contain environmental conditions for the applied-for facilities; and
- (b) during construction, maintain a file in the construction office(s) containing such permits and authorizations together with all permits subsequently obtained, copies of which shall also be filed with the Board.

11. Foothills shall, prior to the commencement of construction, file with the Board an update of the summary detailing the results of discussions with all appropriate landowners, special interest groups, and regulatory agencies and maintain an information file in the construction office(s) which includes:
 - (a) a detailed listing of all site-specific mitigative measures to be employed as a result of undertakings to special interest groups or regulatory agencies; and
 - (b) an explanation of any constraints identified that may affect the construction program.

During Construction

12. Foothills shall ensure during construction that:
 - (a) significant habitat features for wildlife species with a designated status be avoided if the species is present at the time of construction, and that avoidance measures be developed in consultation with the appropriate regulatory agencies; and
 - (b) significant habitat features/specialized habitat for wildlife with a designated status that are not present at the time of construction, plants with a designated status, and all raptors be avoided, relocated, or restored in consultation with appropriate regulatory agencies.
13. Foothills shall ensure that vehicle and equipment traffic be temporarily suspended in native prairie areas under wet soil conditions (wet weather conditions) until dry soil conditions exist, in lieu of full-width or workside topsoil stripping.
14. Foothills shall file with the Board, prior to the commencement of hydrostatic testing, identification of the sources of water for hydrostatic testing, a description of its test water sampling procedures, the discharge locations, and the site specific measures for the withdrawal and discharge of hydrostatic test water to ensure no net loss of the productive capacity of fish habitat.

Post Construction

15. Foothills shall file with the Board a post-construction environmental report within six months of the in-service date for the Wild Horse Pipeline project. The post-construction environmental report shall set out the environmental issues that have arisen up to the date on which the report is filed and shall:
 - (a) indicate the issues resolved and those unresolved;
 - (b) describe the measures Foothills proposes to take in respect of the unresolved issues; and
 - (c) provide details on the monitoring of the following items:
 - (i) the effectiveness of the reclamation program in areas of native pasture;
 - (ii) the effectiveness of the measures to reduce cattle-caused damage to revegetated areas;

- (iii) the locations of, and reasons for, any alternate soil handling procedures implemented, and a discussion of the positive or negative effects of this activity;
- (iv) subsoil compaction, topsoil loss and mixing, and soil erosion, when wet soil conditions are encountered;
- (v) the effectiveness of the reclamation program at the South Saskatchewan River crossing; and
- (vi) for all plant and wildlife species with a designated status, including habitat, that are affected by construction activities, the mitigative measures undertaken and the success of those measures.

16. Foothills shall file with the Board, on or before December 31st following each of the first two complete growing seasons subsequent to the filing of the post-construction environmental report referred to in condition 15:

- (a) a list of the environmental issues indicated as unresolved in the report and any that have arisen since the report was filed; and
- (b) a description of the measures Foothills has taken or proposes to take in respect of those issues.

